

PUBLIC HEALTH IN PHARMACY PRACTICE 2E - A CASEBOOK



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Foreword

The overarching goal of public health is to protect and improve the health of individuals, families, communities, and populations, locally and globally.^[1] In collaboration with physicians, nurses and other healthcare professionals, pharmacists have incredible opportunity and skills to contribute toward this goal. In recent years, the place of public health education and training within the profession of pharmacy has been formalized, both for students and practicing pharmacists alike. Pharmacy curricula, as part of accreditation requirements, are required to design programs that achieve educational outcomes in population-based care, cultural sensitivity, interprofessional collaboration and health and wellness.^[2]

In an effort to further these goals, the following casebook was developed. While a number of public health pharmacy educational texts are available, currently, there is a paucity of resources that focus on application of public health knowledge in a case-based format for pharmacists. Casebooks in health sciences allow opportunity for students to work toward educational competencies through patient-oriented scenarios prior to or in concert with formal clinical experiences.

This casebook, now in its second edition, is a collaboration of over 90 individuals with expertise and training in public health pharmacy. A total of 54 chapters are presented, covering a broad array of topics relevant to pharmacy applications of public health. These topics include, but are not limited to, cross-cultural care, health literacy and disparities, infectious disease, health promotion and disease prevention, medication safety, structural racism, advocacy/policy analysis, chronic disease, women's health, rural health, travel medicine and more. The book is designed to allow educators/students to choose chapters of interest as they feel suited, as each chapter is independent from the others. Each chapter contains learning objectives and an introduction to the topic, followed by a case and questions. The chapter closes with commentary from the authors (e.g. 'pearls' associated with the topic) and patient-oriented considerations for the topic at hand.

While these chapters present some specific tools, such as motivational interviewing, to engage students and colleagues in discussions, we recommend facilitators go beyond the basics and allow for more nuanced conversations where participants can dig deeper into their own experiences and understanding. We encourage participants to apply these skills to build relationships with patients, check their own assumptions and beliefs and what shaped them, and think about collectively working towards an equitable future. We hope these chapters will provide a starting point to deepen conversations, particularly around social determinants of health and health equity.

It is our desire that this casebook may serve as a useful tool in furthering the understanding and application of pharmacy skills within the field of public health, ultimately helping to create a healthier and more just globe.

Regards,

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1. Association of Schools and Programs of Public Health. Discover: what is public health? <https://www.aspph.org/discover/>. Accessed July 26, 2021. ↵
 2. Accreditation Council for Pharmacy Education. Accreditation standards and key elements for the professional program in pharmacy leading to the Doctor of Pharmacy Degree "Standards 2016". <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf>. Accessed July 26, 2021. ↵

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1.1: An ounce of prevention- pharmacy applications of the USPSTF guidelines

Topic Area

Health promotion/disease prevention

Learning Objectives

At the end of this case, students will be able to:

- Describe preventive medicine and the role of the pharmacist
- Differentiate between primary, secondary, and tertiary prevention and give examples of each type of prevention
- Describe the United States Preventive Services Task Force (USPSTF) and the methods used to evaluate the potential harms and benefits of clinical preventive services
- List and describe the clinical preventive services recommended for the general adult population by the USPSTF
- Apply USPSTF recommendations for clinical preventive services to a patient case

Introduction

Preventive medicine, as defined by the American College of Preventive Medicine, “*focuses on the health of individuals, communities, and defined populations. Its goal is to protect, promote, and maintain health and well-being and to prevent disease, disability, and death.*”¹ Disease prevention utilizes screening and risk factor assessment to identify individuals and populations at elevated risk and intervenes to modify those factors to prevent the onset of disease. Health promotion can be viewed from the positive side as the promotion of healthy lifestyles which will prevent or delay the onset of disease. Disease management is also an important part of preventive medicine in that it seeks to ensure that conditions are managed according to guidelines to delay disease progression. Preventive medicine can be delivered by many healthcare professionals, including pharmacists.

Preventive medicine relies on the provision of evidence-based preventive services to individuals based on their age, sex and risk level. The United States Preventive Services Task Force (USPSTF) is a panel of experts who review the published literature and the evidence for clinical preventive services or specific populations (e.g., general adult population, pregnant women, children). The USPSTF then creates a list of recommended preventive services for each population based on the grades assigned to the services (see USPSTF Grade Definitions below).² Services evaluated encompass all levels of prevention. A common way of classifying services is by primary, secondary and tertiary prevention. Primary prevention services intervene prior to disease occurrence, secondary prevention services intervene to identify early stage disease and to lessen the disease’s impact, and tertiary prevention services manage diagnosed disease to slow or stop progression.³

USPSTF Grade Definitions²

- Grade A: The USPSTF recommends the service. There is high certainty that the net benefit is substantial.
- Grade B: The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.
- Grade C: The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.
- Grade D: The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.
- Grade I: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

The USPSTF recommends that Grade A and B services be routinely offered in primary care settings to patients who meet

their established criteria. Patients with symptoms of a particular disease may follow a different screening schedule. However, for patients who are uninsured or underinsured, out-of-pocket expenses may be associated with these services. The present challenge of preventive medicine is to ensure that all people have access to age- and sex-appropriate services at an affordable cost. Additionally, there is the challenge to empower and motivate individuals to practice disease prevention and health promotion.² The USPSTF guidelines provide an evidence base for routinely delivering clinical preventive services to all patients. Pharmacists can play an important role in providing clinical preventive services as specified by the USPSTF.

Case

Scenario 1.1.1

You are working as a pharmacist in a Florida community pharmacy. Your pharmacy is in close proximity to highly diverse communities, with large numbers of individuals of lower socioeconomic status. Therefore, your pharmacy has a robust protocol for conducting a short intake interview with all new patients and taking advantage of the opportunity to do basic disease prevention and health promotion counseling with patients needing it. Furthermore, you are located near a Federally Qualified Health Center (FQHC), with which you have a strong referral collaboration established. This FQHC takes all patients regardless of insurance status and charges patients on a sliding fee scale, based on their income. Because of your location, and the service model of your pharmacy, pharmacists in your pharmacy are well trained in the social determinants of health.

CC: “Every night I keep coughing, I would like to purchase a bottle of Sudafed®.”

Patient: LC is a 23-year-old female (66 in, 68 kg) agricultural worker currently working in Florida. She has been living and working in the US for four months, although she does not have authorization to work in the US. She is from southern Mexico. LC presents to the local community pharmacy for a persistent cough. She has no usual source of primary care, so she had no place else to go.

Since Sudafed® is a “behind-the-counter” medication, you conduct a short intake interview with her when she comes to the counter to request the product. As she rarely accesses the healthcare system, you recognize this as an opportunity to provide LC with a comprehensive review of recommended clinical preventive services in addition to helping her with her chief complaint.

HPI: Persistent cough for more than a week. She reports night sweats, which she dismisses as being a result of the hot and humid climate in Florida.

PMH: Mild eczema on hands and forearms; seasonal allergies (pollen); no prior hospitalizations or surgeries

FH:

- Father: T2DM, HTN
- Mother: T2DM
- Three younger siblings, alive and well

SH:

- Sexually active, in a committed relationship with a male partner; no children
- Never used tobacco or illicit drugs, but her partner smokes cigarettes

Medications:

- Loratadine 10 mg once daily PRN seasonal allergies (OTC)

Allergies: NKDA

SDH: Fluent in Spanish; conversational English only. Eight-grade education. Annual income approximately \$13,500. Lives in a small trailer with 8 other adults.

Additional context: Agricultural workers, also known as farm workers or crop workers, have unique exposures and backgrounds that may increase their risk of adverse health outcomes.^{4,5} It has been estimated that about 53% of agricultural workers had work authorization in the United States in 2013-2014. About 74% of agricultural workers indicate that Spanish is their preferred

language. The average level of formal education completed by agricultural workers is the eighth grade, and their mean annual income is estimated to be \$15,000.⁵

Only about 35% of agricultural workers have health insurance and therefore bear a high burden of out-of-pocket healthcare costs. In a national survey, 43% indicated that they paid for their last health care visit out-of-pocket, and the cost of healthcare was cited most often by agricultural workers as a challenge in accessing healthcare.⁵

Many agricultural workers have exposure to environmental hazards such as pesticides and may be at increased risk for work-related injury. “Crowded” living conditions (defined as the number of persons per room is greater than one),⁵ inadequate sanitation, and poor nutrition are common experiences for seasonal agricultural workers, all of which can facilitate spread of infectious disease.⁴

Case Questions

1. What social determinants of health did you identify with LC?
2. What USPSTF-recommended clinical preventive services (Grade A or B only) is this patient eligible for based on established criteria?
3. Which of the services above could be considered as primary prevention services? Secondary prevention? Tertiary prevention?
4. Which services do you think should be prioritized for her to receive first? And how will you make this decision?
5. What can the community pharmacist do to increase the likelihood that LC will receive the other needed services?

Author Commentary

Pharmacists’ services, especially those being provided in community pharmacies, can fill important gaps in care for vulnerable populations. Depending on worksite and resources available, pharmacists will be involved in provisions of clinical preventive services to varying degrees. Most community pharmacies typically provide several preventive services, such as vaccinations; and blood pressure, glucose, and/or lipid screenings. However, the community pharmacy is often one of the only healthcare facilities that some uninsured or underinsured people will visit. Therefore, it is advantageous to use the patient encounter to discuss preventive services with these patients and to offer services as available or refer for services as appropriate. Having a collaboration with a nearby clinic or health center is an opportunity to make referrals for patients to receive additional preventive services that are not offered in the pharmacy. In this way, pharmacists can truly realize their role in clinical-community linkages.

Patient Approaches and Opportunities

When working with patients for whom English is not their first language, you should first determine whether the patient’s English or your foreign language level is adequate to communicate effectively. If not, trained medical interpreters or telephone-based interpretation services may need to be utilized during the patient encounter.

Community pharmacists have the unique opportunity to offer face-to-face interventions every day. Collecting a comprehensive medical history during the patient’s first visit is a great way to identify opportunities to apply strategies from the USPSTF; however, some community pharmacies’ workflow may limit this opportunity. Realize that you may not have all of the patient information that you may need or want, like information on childhood illnesses or vaccination status, and consider how you will handle that limitation in patient information. Remember to use best practices related to cultural competency and low health literacy. You may need to determine, based on eventual disease diagnoses, whether there are any intervention(s) that need to be provided to a patient’ partner(s) and/or close contacts. Assuring the patient that you will respect confidentiality regarding their information is critical to developing a trusting relationship.

Finally, because the guidelines are updated by USPSTF as new information becomes available, pharmacists should stay up-to-date on the current USPSTF Grade A&B recommendations for various patient populations. The AHRQ electronic Preventive Services Selector (ePSS) referenced below is a valuable tool to quickly identify services appropriate for an individual patient.

Important Resources

Related chapters of interest:

- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [From belly to baby: preparing for a healthy pregnancy](#)
- [Laying the foundation for public health priorities: Healthy People 2030](#)
- [The Sustainable Development Goals and pharmacy practice: a blueprint for health](#)
- [Uncrossed wires: working with non-English speaking patient populations](#)

External resources:

- Websites:
 - AHRQ ePSS (Electronic Preventive Services Selector) – note: this resource can be used online or downloaded onto a device (tablet or smartphone)
<https://epss.ahrq.gov/PDA/index.jsp>
 - Centers for Disease Control and Prevention. Creating Community-Clinical Linkages Between Community Pharmacists and Physicians: A Pharmacy Guide.
<https://www.cdc.gov/dhds/pubs/docs/ccl-pharmacy-guide.pdf>
 - USPSTF Grade Definitions:
<https://www.uspreventiveservicestaskforce.org/Page/Name/grade-definitions>
 - USPSTF A and B Recommendations for Primary Care Practice
<https://www.uspreventiveservicestaskforce.org/Page/Name/uspstf-a-and-b-recommendations/>
 - USPSTF Full Recommendations for Primary Care Practice:
<https://www.uspreventiveservicestaskforce.org/Page/Name/recommendations>
- Journal articles:
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 - Murphy BL, Rush MJ, Kier KL. Design and implementation of a pharmacist-directed preventive care program. *American Journal of Health-System Pharmacy* September 2012, 69 (17) 1513-1518. DOI: <https://doi.org/10.2146/ajhp110384>
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.2: Communicating health information- hidden barriers and practical approaches

Topic Area

Health literacy

Learning Objectives

At the end of this case, students will be able to:

- Recognize the role health information literacy plays in health care and how pharmacists literacy skills are necessary to improve patients' understanding of their health
- Discuss the red flags of limited health literacy
- Identify resources that may be useful for patients with limited health literacy, and why these resources are useful
- Apply the *Health Literacy Universal Precautions* to a patient case

Introduction

According to the 2003 National Assessment of Adult Literacy, 36% of US adults aged 16 years or older have health literacy skills at a basic level or below.¹ For adults greater than 65 years old, this jumps to 59%, with 29% of those having below basic skills. There are many definitions, but generally health literacy is defined as the “degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.”² Even broader, information literacy is defined as being able to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.”³ These skills are necessary for patients to be able to understand their health and their current or potential treatments. With poor health literacy, patients are less likely to understand what their health provider is telling them, to see how different aspects of their health tie together, or to know what steps they need to take to keep or improve their health. Additionally, patients with limited health literacy are more likely to experience poorer health outcomes and increased healthcare costs.⁴⁻⁷

In 2009, The Calgary Charter was created by individuals from Canada, the US, and the UK to identify the core principles of health literacy. The definition of health literacy defined by this document includes the important component of the health provider having the information literacy skills necessary to recognize and efficiently solve their own information needs.⁸ Health literacy is important for pharmacists to be able broaden their knowledge and stay current with health and medical research. An information literate pharmacist is also more aware of his or her patient's health literacy and has the skills needed to find needed information for the patient, the patient's prescribing provider, and his or herself as necessary.

Assisting patients with their health literacy and understanding of even one piece of health information can have a beneficial rippling effect, including increasing their comfort and willingness to discuss health questions or concerns with health care providers.⁹⁻¹¹ Patients with improved health literacy are also more likely to discuss screening and treatment options, as well as follow recommended treatment procedures and healthy lifestyle habits in order to reduce health risks.

Case

Scenario 1.2.1

You are a pharmacist in the community setting.

CC: “I need some refills on my meds.”

HPI: Steve tells the pharmacy technician that he needs to refill his “pink round pill, his blue rectangle pill, and his white round pill, and there may be one or two other ones.” While the technicians are submitting the refill requests, you take time to review Steve’s medication profile (see below).

PMH: Depression; hypertension; T2DM

FH: Noncontributory

SH: Current tobacco use

Medications:

Medication	Fills
Amlodipine 10 mg PO daily	#90 filled 4 months ago #90 filled 6 months ago
Aspirin 81 mg PO daily	#30 filled 28 days ago #30 filled 3 months ago
Benazepril 20 mg PO daily	#90 filled 4 months ago #90 filled 6 months ago
Bupropion SR 200 mg PO BID	#60 filled 6 months ago #60 filled 7 months ago
Glimepiride 4 mg PO daily	#30 filled 28 days ago #30 filled 3 months ago
Metformin 1000 mg PO BID	#180 filled 4 months ago #180 filled 6 months ago
Sertraline 100 mg PO daily	#30 filled 28 days ago #30 filled 3 months ago

Allergies: NKDA

SDH: Steve completed high school, and currently works at the local post office.

Additional context: Once his prescriptions are ready, you ask Steve if you may take a few minutes to review his medications and other health information. During the counseling, you observe that although Steve has been taking the same medications for the past year, he is unsure as to the exact purpose of each. In addition, he admits to missing some of his follow up appointments with his primary care provider due to various reasons.

Case Questions

1. From this one interaction with Steve, how would you classify his health literacy? Are there any red flags that led you to your

conclusion?

2. What concepts and/or techniques can be used when communicating with Steve to ensure his complete understanding?
3. What things should be considered when looking for appropriate health information for patients?
4. What additional resources are available for you to learn more about methods to improve health literacy?

Author Commentary

Limited health literacy is linked with poor health outcomes.⁴⁻⁷ Patients with limited health literacy are more likely to utilize emergency room services, have more hospitalizations, and are less likely to utilize preventive services like mammography or receive influenza vaccinations compared to their more health literate counterparts. Focused interventions, such as those recommended in the [Health Literacy Universal Precautions](#), have been shown to improve health literacy. In addition, delivery of the interventions by a healthcare professional, like a pharmacist, increases efficacy of the intervention.

While communication skills overlap with health literacy skills, they are not the same thing. It is important to remember that just because a person may have great communication skills, he or she may not necessarily be health literate. In order to effectively communicate about health, especially with a range of levels of health literate individuals, it is necessary to be health literate yourself. Some patients with health literacy issues may benefit by bringing their prescribing providers into the conversation. Prescribing providers and pharmacists who have an understanding and awareness of the importance of health literacy may have improved communication that allows enhanced learning about their patient's medications and concerns, further benefiting their patients. Positive experiences while communicating with pharmacists could also lead to more open and honest communication and collaboration.

Health literacy not only affects individual patients, but also can affect health-systems due to the costs of increased hospitalizations and healthcare utilization overall. Organizations like Joint Commission recognize the important impact that health literacy plays on patient safety and have encouraged institutions to incorporate policies that facilitate enhanced patient-provider communication.

There are many tools available to formally assess a patient's health literacy; however, their routine use in practice may be limited due to the time necessary to administer. Quick assessments such as the Single Item Literacy Screener or Newest Vital Sign may be useful for the general population, and assessments such as the Literacy Assessment for Diabetes are more suited for specific patient populations.

Patient Approaches and Opportunities

Health literate pharmacists can positively affect patients. Pharmacists may be able to take more time discussing the patient's health than other health professionals. They also are able to have their discussions in a different environment than a cold clinical office. By being health literate themselves, and assessing and acknowledging their patients' level of health literacy, pharmacists can help patients improve understanding of their health information. With this understanding, patients are more likely to take steps to improve their health, including improved drug adherence.¹² Pharmacists should apply the Health Literacy Universal Precautions during each patient encounter. Be sure to provide clear communication that incorporates words, numbers, and images that are familiar to the patient or population with whom you are communicating. Strategies that can improve spoken communication include using the patient's own words; limiting content presented to 3-5 key concepts and repeat; encouraging questions; and incorporating the teach-back method. Utilizing these strategies can help increase patients' understanding of health information.

Other strategies to help improve health literacy include using clear, basic, and respectful language, a moderate speaking pace, open-ended questions, and easy-to-understand materials including images and diagrams. Other strategies include making and sharing action plans with patients, and directing patients to resources for additional literacy and/or math skill training, as well as community resources as applicable. Example resources include [Medline Plus' Medical Encyclopedia](#) and [Word Part appendix](#), as well as simple articles such as [healthywomen.org's post on health literacy](#). Regardless of the patient's health literacy level, having a health literate provider enhances the patient-provider relationship.⁸

Important Resources

Related chapters of interest:

- More than just diet and exercise: social determinants of health and well-being
- Saying what you mean doesn't always mean what you say: cross-cultural communication
- Pharmacists and Medicare Part D: helping patients navigate their prescription benefits
- Let your pharmacist be your guide: navigating barriers to pharmaceutical access
- You say medication, I say meditation: effectively caring for diverse populations
- Uncrossed wires: working with non-English speaking patient populations

External resources:

- *Healthy People 2020*, Evidence-Based Resource Summary. <https://www.healthypeople.gov/2020/tools-resources/evidence-based-resource/national-action-plan-improve-health-literacy>
- Health Literacy Tool Shed. <http://healthliteracy.bu.edu/all>
- AHRQ Health Literacy Universal Precautions Toolkit. <https://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/index.html>
- Centers for Disease Control and Prevention, What is Health Literacy. <https://www.cdc.gov/healthliteracy/learn/index.html>
- The Joint Commission, "What Did the Doctor Say?": Improving Health Literacy to Protect Patient Safety. https://www.jointcommission.org/assets/1/18/improving_health_literacy.pdf
- Medline Plus Health Literacy. <https://medlineplus.gov/healthliteracy.html>
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Glossary and Abbreviations

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1.3: Medication safety- to 'error' is human

Topic Area

Medication safety

Learning Objectives

At the end of this case, students will be able to:

- Define medication-use safety and the importance to public health
- Identify risk factors associated with medication safety and reasons for unsafe medication use in elderly patients
- Examine the pharmacist's role and tools used to improve medication safety
- Recommend resources pharmacists can provide to patients with physical impairments to overcome medication-related issues
- Recommend a plan of action using the Medication Appropriateness Index (MAI)

Introduction

Medication use safety is an important aspect of the healthcare delivery system to consider in all patients as it can affect the patient's overall health at home and within the healthcare system. When thinking about this issue, it is common to consider the use of medication in specific populations (such as elderly patients), language barriers, adverse drug events (ADE), drug shortages, and acquisition of medications.

ADEs often result from unsafe medication use, leading to more than one million visits to the emergency room and 350,000 hospitalizations on an annual basis.¹ Billions of dollars are spent addressing ADEs, with the elderly population particularly at risk.²⁻⁴ Reasons for this include physiologic changes, health literacy barriers, health disparities, polypharmacy, and nonadherence. Nonadherence can be intentional or unintentional and affected by medication efficacy, perceptions of one's health or illness, or cultural beliefs.⁵ The inherent nature of medications can also predispose patients to ADEs.^{4,6} Although not limited to the elderly, physical impairments can also result in medication nonadherence and ADEs. Impairments can include, but are not limited to, dexterity, vision, mental status, and hearing.

Due to the large impact on public health, pharmacists have access to many tools and resources that have been developed to prevent and resolve ADEs. For example, many medications that may be unsafe for older adults (e.g., anticholinergics, antihypertensives, antipsychotics, insulin, and sedatives) exist on the *Beers Criteria for Medication Use in Older Adults*.⁷ Pharmacists can use these criteria to determine the appropriateness of an older adult patient's medication regimen and seek alternative therapeutic choices. As one of the most widely used resources, the *Criteria* is regularly updated based on the most current research to support the safe and effective use of the listed medications along with corresponding strengths of recommendation. The combination of the *Screening Tool of Older People's Prescriptions (STOPP)* and *Screening Tool to Alert to Right Treatment (START)* criteria can also be used to determine potentially inappropriate prescribing in older adults while offering treatment alternatives.⁸ The *Medication Appropriateness Index (MAI)* is another tool that can be used to prevent ADEs; this tool consists of 10 questions that a pharmacist may ask regarding each drug a patient is taking.⁹ The questionnaire assesses a medication's indication, effectiveness, dose, directions for use, administration, interactions, duration of use, and cost. Based on a score ranging between 0 and 18, the *MAI* provides a final rating of appropriateness: appropriate, marginally appropriate, or inappropriate. Additional screening tools and scales used to assess a patient's understanding of medications and diseases include the Drug Regimen Unassisted Grading Scale (DRUGS), Medication Management Instrument for Deficiencies in the Elderly (MedMaIDE), Medi-COG, and the Self-Administration of Medication (SAM).^{10,11,12}

Case

Scenario 1.3.1

You are a pharmacist working in a family medicine clinic.

CC: “I need a refill on my shots”

HPI: GR is a 79-year-old female patient (65 in, 77 kg) presenting to her family medicine clinic for follow-up for her chronic disease states. The patient has been in India the past four months with family members and indicates no healthcare concerns at this time. She reports no hypoglycemic events and states that her blood sugar levels are “good”. The patient did not bring her blood glucose log to clinic.

PMH: T2DM; HTN; HLD; severe osteoarthritis in her hands

FH:

- Mother: T2DM, breast cancer
- Father: MI at age 57

Medications:

- Metformin 500 mg BID
- Insulin glargine 42 units SQ at bedtime (vials and syringes for insurance purposes)
- Glyburide 10 mg daily
- Atorvastatin 80 mg daily
- Lisinopril 20 mg daily
- Hydrochlorothiazide 25 mg daily
- Acetaminophen 500 mg four times daily as needed for pain

Labs:

- Na 140 mmol/L
- K 4.2 mmol/L
- Cl 101 mmol/L
- CO₂ 27 mmol/L
- BUN 16 mg/dL
- SCr 0.92 mg/dL
- Ca 9.6 mg/dL
- Glucose 148 mg/dL
- HgA1c 9.1%
- LDL 98 mg/dL
- HDL 41 mg/dL
- Triglycerides 137 mg/dL
- Total cholesterol 166 mg/dL
- Alk phos 64 U/L
- AST 25 U/L
- ALT 32 U/L

VS:

- BP 138/72 mmHg
- HR 84 bpm
- RR 12/min

SDH: Because GR's English proficiency is low, she is accompanied by her son to her appointment to aid in translation.

Additional context: Upon interviewing the patient (by way of her son), you found that she ran out of her insulin glargine while she was in India. While in India, her nephew ordered insulin online from an internet pharmacy because the pharmacy she normally uses could not acquire the medication due to a current shortage. She also states that her nephew thinks that she should be cooking with extra turmeric and cinnamon to help with her diseases rather than using the “chemicals” found in medications.

Case Questions

1. Identify and describe the areas of increased medication safety concern for this patient.
2. Based on the *MAI*, which medication is least appropriate for this patient? How should this be addressed?
3. How would you address her statement about her nephew's beliefs in the use of turmeric and cinnamon instead of her prescription medications?
4. The patient's insulin glargine is currently on back order due to a medication shortage. What are some of the resources the pharmacist could turn to gather information on this shortage?
5. Because the patient's son bought her insulin online, this medication is at high risk of being counterfeit. What is the most common source of counterfeit medication? Identify the safety concerns related to counterfeit medication use.

Author Commentary

Pharmacists are the key professionals positioned to address medication safety by ensuring appropriate prescribing, dispensing, administration, lab monitoring, and adherence. Drug shortages may also cause a number of safety concerns through delays in treatment that may compromise clinical outcomes.¹³ Drug shortages have also been linked to medication errors and an increase in adverse events and death.^{13,14} Counterfeit medications may arise due to difficulty in acquiring medications such as drug shortages, high costs for the patient, convenience of internet pharmacies, and breakdowns in the medication supply chains.¹⁵ Counterfeit medications have been shown to present as safety concerns for patients, and multiple instances have occurred where purported ‘medications’ have no active ingredient whatsoever.¹⁵ Other safety concerns include the addition of harmful substances (bacteria-laced water, paint, floor wax, boric acid, powdered cement, and antifreeze), incorrect active ingredient in the product, and wrong concentration or dose.¹⁵⁻¹⁸ Internet pharmacies are the primary source of counterfeit medications, and many patients do not know the dangers.¹⁹ Many companies claim that the medications are being manufactured in Canada, but this has been proven to be false. They often provide medications that are not approved by the FDA or Canadian government. Sadly, there have even been links to terror organizations.¹⁵

The FDA and ASHP have excellent resources available on their websites that display current drug shortages, reasons for shortage, expected availability and available products.^{20,21}

Patient Approaches and Opportunities

Pharmacists are uniquely positioned to identify medication safety issues, decrease patients' risk for adverse drug events, and improve the patient experience and outcomes. Community pharmacists often encounter patients with physical impairments and can provide resources to overcome medication-related issues and nonadherence. For patients with osteoarthritis, rheumatoid arthritis, lupus, or other conditions that challenge the use of hands and fingers, the following items may be suggested: prefilled blister packs, easy-open caps, easy-open pill extractors, bottle openers, spacer for inhalers, and eye drop guides. For patients who have trouble seeing, pharmacists may provide medication guides or educational pamphlets in larger print, have instructions/counseling spoken aloud, use color coding, or use talking devices. Patients who have trouble hearing instructions can use hearing aids, visual/written aids, or a TeleTYpe (TTY) device.

As the medication experts, pharmacists are also positioned to regularly conduct medication reconciliation to ensure accurate medication lists and work within an interprofessional team to ensure safe and effective use of medications.²²

Important Resources

Related chapters of interest

- [Safe opioid use in the community setting: reverse the curse?](#)

- Saying what you mean doesn't always mean what you say: cross-cultural communication
- More than just diet and exercise: social determinants of health and well-being
- Equity for all: providing accessible healthcare for patients living with disabilities
- Deprescribing in palliative care: applying knowledge translation strategies

External resources

- Websites:
 - FDA Drug Shortages. <https://www.fda.gov/drugs/drugsafety/drugshortages/default.htm>
 - ASHP Drug Shortages. <https://www.ashp.org/drug-shortages/current-shortages>
 - Institute for Safe Medication Practices – <https://www.ismp.org/>
 - Consumer Med Safety – <http://www.consumermedsafety.org/>
 - Patient reporting of suspicious internet pharmacies – <https://nabp.pharmacy/programs/vipps/vipps-accredited-pharmacies-list/>.
- Journal Articles
 - Beers Criteria: American Geriatrics Society 2019 Beers Criteria Update Expert Panel. American Geriatrics Society 2019 updated Beers criteria for potentially inappropriate medication use in older adults. *J Am Geriatr Soc.* 2019;67(4):674-694.
 - START/STOPP Criteria: O'Mahony D; O'Sullivan D ; Byrne S; et al. STOPP/START criteria for potentially inappropriate prescribing in older people: version 2. *Age Ageing.* 2015; 44: 213-218.
 - Medication Appropriateness Index: Hanlon et al. A method for assessing drug therapy appropriateness. *J Clin Epidemiol.* 1992;45:1045-51.

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4. Field TS, Gurwitz JH, Harrold LR, et al. Risk Factors for Adverse Drug Events Among Older Adults in the Ambulatory Setting. *J Am Geriatr Soc.* 2004; 52:1349-1354.
5. Chia L, Schlenk EA, Dunbar-Jacob J. Effect of personal and cultural beliefs on medication adherence in the elderly. *Drugs Aging.* 2006;23(30): 191-202
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7. American Geriatrics Society 2019 Beers Criteria Update Expert Panel. American Geriatrics Society 2019 updated Beers criteria for potentially inappropriate medication use in older adults. *J Am Geriatr Soc.* 2019;67(4):674-694.

1.4: Drawing the line- preventing sexually transmitted infections

Learning Objectives

At the end of this case, students will be able to:

- Explain the incidence of sexually transmitted infections (STIs) in the United States
- Describe groups of individuals at risk of developing complications related to specific STIs
- List the strategies for preventing and controlling STIs
- Recommend scheduling for immunizations to protect against STIs and other related infectious diseases

Introduction

Sexually transmitted infections (STIs) present a unique public health problem. Approximately 20 million new STIs are diagnosed in the US each year, and a large number of cases remain undiagnosed or unreported.¹ And while appropriate treatment options exist for many STIs including syphilis, gonorrhea, and chlamydia,² the number of new cases continues to increase each year.¹ These infections increase the risk of chronic health issues such as complications in reproductive and fetal health as well as increase risk of acquiring other STIs such as human immunodeficiency virus (HIV).¹

Certain groups have been identified as having a higher risk of acquiring particular STIs and/or developing serious long-term complications associated with STIs.¹ Approximately 50% of patients diagnosed with an STI are between the ages of 15 and 24 years of age.³ Women of childbearing age are at high risk of long-term complications; the CDC estimates that approximately 20,000 women become infertile annually due to undiagnosed and/or untreated STIs.⁴ Importantly, increasing rates of syphilis in women of childbearing age has led to an increase in congenital syphilis, which leads to significant morbidity and mortality in infants.⁴ Another group with significant STI risk is men who have sex with men (MSM), and cases of reportable STIs among this population are also consistently increasing year to year.¹

Many behavioral and socioeconomic factors also influence the spread of STIs.⁵ Hispanic, Black, and American Indian patients have higher rates of STIs compared to white patients as these groups also experience decreased access to care, poverty, and communities/sexual networks with higher rates of STIs.⁵ According to *Healthy People 2020*, STIs affect marginalized and indigent patients disproportionately due to decreased access to care and/or social networks with higher risk behaviors.⁵ Patients with substance abuse disorders are also at a higher risk of acquiring an STI due to an increased likelihood of engaging in high-risk behaviors.⁵ An important aspect of decreasing the societal burden of STIs is the likelihood of patients to seek treatment for these infectious diseases; however, the stigma associated with STIs including HIV may limit patients from accessing diagnosis and care.⁵

Education, prevention measures, and prompt diagnosis and treatment are of utmost importance in controlling the STI epidemic in the US as rates of chlamydia, gonorrhea, and syphilis have consistently increased each year from 2013-2017.¹ Funding has also been cut from state resources including health departments; therefore, evaluating patients for sexual history and risky behaviors at any point of contact with the healthcare system is needed.¹ Prevention efforts should be coordinated between community, public health, and medical services. In addition, system-level obstacles should be reevaluated to allow for expedited partner therapy (EPT) for certain types of STIs as well as community-based test and treat programs. Pharmacists are easily accessible to many patients who otherwise may not seek medical care and are in a position to provide much needed patient education, counseling, and linkage to care for those patients who may benefit from STI evaluation and/or treatment.

Case

Scenario 1.4.1

You are a pharmacist working in an ambulatory care clinic in New York City where you often counsel patients about prevention and treatment of STIs.

CC: “I have a crazy rash that covers most of my body. I am really worried about it because I don’t know where it came from.”

Patient: JB is a 20-year-old African American male who is a senior art major at New York University (NYU). JB presents to clinic complaining of a rash that covers a large portion of his body, including the soles of his feet. He does not have a primary care physician in the city and was referred to the clinic by a friend.

HPI: New onset rash that covers ~60% of his body, including the soles of his feet. No fever, chills, or systemic signs of infection. No complaints of pain or trouble urinating.

PMH: No significant history or surgeries

FH:

- Father: unknown
- Mother: hypertension and hyperlipidemia
- One younger sister with no significant medical history

SH:

- Drinks socially (7-8 vodka drinks) on weekend nights
- Denies cigarette smoking
- Occasional drug abuse when “partying with friends” in the city
- Sexually active with multiple male partners (reports condom use ~60% of the time), states that he is typically the receptive partner

SDH: American-born student at NYU with a part-time job at an art studio, full scholarship to NYU with on-campus housing and meals provided, raised by a single mother in rural, upstate New York with minimal access to healthcare service

Medications:

- Acetaminophen PRN for headaches
- Melatonin PRN for sleep
- Multivitamin daily

Allergies: NKDA

Vaccinations: No documentation available, patient states that he thinks he has received all routine childhood vaccines but is unsure

Vitals:

- BP 116/70 mmHg
- HR 70 bpm

Labs: None available at this time

Case Questions

1. Is JB considered to be a patient at high risk for acquiring STIs? Why or why not?
2. Without further laboratory data, which STI does JB most likely have? What is the appropriate therapy for JB at this time

- (include appropriate follow-up)? Without proper treatment, which additional STI is JB at high risk for?
- JB is extremely upset with his diagnosis and wants to know more about how to avoid STIs in the future. What non-pharmacologic recommendations can you provide JB with at this time?
 - Which screening tests should be performed at least every year in MSMs who are sexually active?
 - According to the CDC & the 2015 STD Treatment Guidelines, what are the five major strategies for preventing and controlling the spread of STIs?
 - JB wants to know if there are any vaccinations available to protect patients against STIs. What information can you provide JB with at this time? What are the recommended age and dosing schedule for each of these vaccinations?

Author Commentary

STIs are on the rise despite available education, prevention strategies, and antibiotic treatment. For the fifth consecutive year (2013-2018), STI rates, including chlamydia, gonorrhea, and primary/secondary syphilis, have increased based on CDC reports.¹ Resources for testing and treating STIs are limited, especially among groups who are at highest risk for infection. Without appropriate diagnosis and treatment, patients are at risk for long-term health consequences as well as transmitting the infection to others, increasing the societal burden. Partner services are often limited due to lack of appropriate health department resources and/or state laws that prevent EPT. Pharmacists may be one resource that can bridge the gap between patients and health departments/clinics by counseling patients on the importance of being tested and treated for STIs.

Patient Approaches and Opportunities

Patients often do not understand that STIs can be transmitted by anal and oral sex; therefore, patient education at points of contact within the healthcare system is of utmost importance. Additionally, taking a thorough sexual history is necessary to assess the patient for STI risk factors and to recommend routine screening. Ensuring that the patient never feels “judged” by any healthcare worker is an imperative aspect of building a strong relationship. Pharmacists in community and/or ambulatory care settings have a unique opportunity to educate patients about STI transmission, the importance of partner screening, and available prevention measures such as vaccines and barrier contraceptives. In addition, pharmacists can link patients to the nearest health department or local clinics to be tested and treated for STIs. When discussing STIs and sexual health, it is imperative to keep in mind cultural differences and the health literacy of the individual patient.

Important Resources

Related chapters of interest:

- [HIV and hepatitis C co-infection: a double-edged sword](#)
- [An ounce of prevention: pharmacy applications of the USPSTF guidelines](#)
- [Sex education: counseling patients from various cultural backgrounds](#)
- [PrEPare yourself: let's talk about sex](#)

External resources:

- Healthy People 2020:* <https://www.healthypeople.gov/2020/topics-objectives/topic/sexually-transmitted-diseases>
- Centers for Disease Control and Prevention- Sexually Transmitted Diseases (STDs): <https://www.cdc.gov/std/tg2015/tg-2015-print.pdf>
- 2021 Sexually Transmitted Disease Treatment Guidelines: <https://www.cdc.gov/std/treatment-guidelines/default.htm>

1.5: Interprofessional collaboration- transforming public health through team work

Learning Objectives

At the end of this case, students should be able to:

- Describe the Interprofessional Education Collaborative core competencies
- Discuss the importance of interprofessional collaboration in public health practice
- Identify different models or frameworks to build community partnerships and interprofessional collaborations in addressing public health needs
- Apply components of various models in creating and sustaining community partnerships to public health prevention initiatives

Introduction

Research has identified effective healthcare teams as a factor in improved patient outcomes and reduction in medical errors.¹ In order for health professions to learn to work together optimally, health profession higher education has placed increased emphasis on interprofessional education (IPE). The World Health Organization (WHO) defines IPE as the process in which “two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes.”² The Interprofessional Education Collaborative (IPEC), which consists of national health education organizations, has identified the following four core competencies common to healthcare professions that support effective team development and function.

- **Values/ethics for interprofessional practice** To work with individuals of other professions to maintain a climate of mutual respect and shared values
- **Roles/responsibilities** To use the knowledge of one’s own role and those of other professions to appropriately assess and address the healthcare needs of patients and to promote and advance the health of populations
- **Interprofessional communication** To communicate with patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease
- **Teams and teamwork** To apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver and evaluate patient population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable³

In regard to public health, building partnerships across health professions and community organizations is an important step in addressing complex health issues. Effective interprofessional collaboration is both necessary and critical, given the complexity of public health issues and the multiple stakeholders involved. Additionally, interprofessional collaboration in relation to public health often includes more disciplines than pharmacists typically see in clinical practice.

While these interprofessional teams can tackle complex public health issues, it is important that the team be moving in the same direction. A first step is conducting a community health needs assessment to identify and prioritize health issues.⁴ Once a need has been selected, the team can utilize various models that provide a blueprint for creating and sustaining partnership,⁵⁻⁷ such as the *Creating and Maintaining Partnerships* toolkit and the *Developing a Framework or Model of Change* toolkit from Community Toolbox.^{6,8} The *Creating and Maintaining Partnerships* toolkit provides an outline of questions and resources to consider when building partnerships across professions and with community-based organizations. The *Developing a Framework or Model of Change* toolkit helps in developing an overarching framework for the program, activities, and intended outcomes. Once a partnership has been forged between health systems and community-based organizations, useful resources, such as the *Partnership Assessment Tool for Health* (PATH), can assist collaborators in working together effectively to maximize the impact of the partnership.⁹ Further guidance is available on approaches to consider for successful health partnerships.¹⁰

Case

Scenario 1.5.1

It's finally happened—you have your license to practice pharmacy! You've recently moved and accepted a residency position at a large teaching hospital downtown. On your first day at work, the residency director assigns a project she wants you to complete by the end of your one-year residency: developing a hypertension primary prevention interprofessional initiative in the surrounding community. The previous resident's project was a community health needs assessment that found hypertension to be a prevalent and growing issue in the community. The community you now work and live in is underserved and located in an urban setting with low socioeconomic status, low health literacy, a high disease burden, and a high crime rate. Although the community has its struggles, it also has a strong community presence, including many people, organizations, and institutions that want to help. Being at an academic medical center located in a heavily populated community lends itself to many diverse and creative opportunities for collaboration.

Case Questions

1. **Interprofessional/IPEC** Which professional healthcare groups do you want represented on the team to help with the project? Why?
2. **Interprofessional/IPEC** How would the team identify and communicate about each member's functions or roles, responsibilities, and accountabilities? How will the team communicate about the project's goals and progress?
3. **Stakeholders/partners** Using the *Creating and Maintaining Partnerships* toolkit, which stakeholders and partners (other than healthcare professionals) do you want to include in this project? Why? How will you include them?
4. **Shared goal/vision** Using the *Creating and Maintaining Partnerships* toolkit, create an overall shared goal/vision for the project.
5. **Initiative** Using the *Developing a Framework or Model of Change* toolkit, develop a feasible initiative concerning hypertension primary prevention in your community.

Author Commentary

The multifaceted nature of public health requires a sound, interprofessional approach in addressing issues. Tackling public health issues requires a team-based approach, often with disciplines pharmacists are not typically familiar with. Such collaborations are necessary but are also difficult to establish and maintain. Taking the time to carefully and purposefully choose an interprofessional team, where each member brings unique connections, knowledge, and/or skills, is critical for success. Once you have your team, it is equally important that you are all on the same page, so as to promote open communication and engagement among members. Ensuring that your initiative is clear, impactful, and feasible can help team members fully engage in the project and prevent unnecessary barriers from impeding progress. Utilizing tools (such as those included herein) aimed to create impactful initiatives, establish and maintain interprofessional teams, and establish a shared vision among teams, can be extremely helpful when pursuing public health initiatives.

Patient Approaches and Opportunities

When developing an interprofessional team, it is important to be both creative and critical, so as to include a wide range of professionals who can contribute in unique, meaningful ways. Establishing relationships with stakeholders, especially those from the community, is critical toward building trust and a strong foundation for resulting initiatives. Following a patient-centered paradigm of seeking to include patients (or, in this case, "community members") in the design, implementation, and closure of a project, will lead to better-designed and, likely, more impactful programs. Utilizing toolkits and models (such as those included here) can help practitioners create and implement, in a logical, step-by-step fashion, an interprofessional public health initiative.

Pharmacists play an important role in public health. As medication experts, we understand the nuances associated with the ramifications of widespread medication use in our society, including issues of nonadherence, medication safety, adverse events, overdoses, and pharmacoeconomics (costs). Your value as part of the interprofessional team is crucial. However, it can be difficult at times to integrate your knowledge and opinions in an interprofessional setting and/or team and, ultimately, show your value. Becoming a more effective team member takes practice. As you improve leadership and communication skills, your ability to work with others will improve. In addition to hands-on practice, resources are available to improve interprofessional teamwork skills.

These resources are diverse and include articles, toolkits/models, surveys, reflections, modules, and curricula.

Important Resources

Related chapters of interest:

- [Communicating health information: hidden barriers and practical approaches](#)
- [The 'state' of things: epidemiologic comparisons across populations](#)
- [More than just diet and exercise: social determinants of health and well-being](#)

External resources:

Websites:

- IPEC Core Competencies. <https://www.ipecollaborative.org/ipec-core-competencies>
- IPEC Resources. <https://www.ipecollaborative.org/resources>
- Interprofessional Education Collaborative, "Resources," <https://www.ipecollaborative.org/resources.html>.
- National Center for Interprofessional Practice and Education, home page, <https://nexusipe.org>.
- US Department of Labor, Bureau of Labor Statistics, "Occupational Outlook Handbook," <https://www.bls.gov/ooh/healthcare/home.htm>.

Publications

- Robert Wood Johnson Foundation, "Lessons from the Field: Promising Interprofessional Collaboration Practices," white paper, 2015.
- Stergios T. Roussos and Stephen B. Fawcett, "A Review of Collaborative Partnerships as a Strategy for Improving Community Health," *Annual Review of Public Health* 21 (2000): 369–402.
- Steven A. Schroeder, "We Can Do Better—Improving the Health of the American People," *New England Journal of Medicine* 357 (2007): 1221–28.
- Matthew K. Wynia, Isabelle Von Kohorn, and Pamela H. Mitchell, "Challenges at the Intersection of Team-Based and Patient-Centered Health Care: Insights from an IOM Working Group," *Journal of the American Medical Association* 308, no. 13 (2012): 1327–28.

Models

- Center for Health Care Strategies, Inc., "Partnership Assessment Tool for Health," <https://www.chcs.org/resource/partnership-assessment-tool-health/>.
- Centers for Disease Control and Prevention, "Assessment & Planning Models, Frameworks & Tools," <https://www.cdc.gov/stltpublichealth/cha/assessment.html>.
- Centers for Disease Control and Prevention, "Community Health Assessments & Health Improvement Plans," <https://www.cdc.gov/stltpublichealth/cha/plan.html>.
- Community Tool Box, "Creating and Maintaining Partnerships," <https://ctb.ku.edu/en/creating-and-maintaining-partnerships>.
- Community Tool Box, "Developing a Framework or Model of Change," <https://ctb.ku.edu/en/4-developing-framework-or-model-change>.
- Robert Wood Johnson Foundation, "The Secret to Successful Health Partnerships," https://www.rwjf.org/en/blog/2015/02/the_secret_to_success.html.
- National Association of County and City Health Officials, "Mobilizing for Action through Planning and Partnerships (MAPP)," <https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp>.
- Practical Playbook, "Building a Partnership," <https://www.practicalplaybook.org/section/building-partnership>.

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.6: HIV and hepatitis C co-infection- a double-edged sword

Learning Objectives

At the end of this case, students will be able to:

- Describe specific patient groups that require screening for HIV and Hepatitis C infections
- Explain methods to prevent the transmission of HIV and Hepatitis C infections
- Detail non-pharmacologic counseling points for patients newly diagnosed with HIV and/or Hepatitis C infection

Introduction

Human immunodeficiency virus (HIV) and Hepatitis C virus (HCV) infections can cause significant morbidity and mortality if left untreated. The Centers for Disease Control and Prevention (CDC) estimates that 1.2 million adults and adolescents are living with HIV infection¹ and 2.4 million individuals are living with chronic HCV infection.² A significant portion of the individuals infected do not know that they are infected. Fortunately, there are available antiviral treatments that are effective at suppressing HIV replication and eradicating HCV.^{3,4} These treatments not only decrease the chances of disease progression but also decrease the risk of transmitting the diseases to other individuals.^{3,4} Therefore, it is vital that appropriate patient groups are screened for these viral infections and then linked to care with appropriate healthcare providers.

All adults ages 18 and over should be screened one time for HCV. All pregnant persons should be screened during each pregnancy. Individuals who are at increased risk of transmission should have periodic repeat screening tests completed.⁴ HCV is most efficiently transmitted by infected blood-to-blood contact. Therefore, those individuals who should be screened due to risk include those who could have come into contact with HCV-infected blood, such as injection drug users, patients on long-term hemodialysis, healthcare workers after a needle stick injury, children born to HCV-infected mothers, and patients receiving blood before 1992.⁴ Additionally, individuals who were ever incarcerated, have HIV infection, have unexplained liver disease, and solid organ donors should be screened for HCV.⁴

All individuals at least 13 years of age should be tested for HIV at least once as a part of routine healthcare.⁵ For those patients who may come into contact with HIV-infected bodily fluids (e.g., blood, semen, vaginal fluids, rectal fluids, breastmilk), at least yearly screening is recommended.⁵

Patients diagnosed with HIV and/or HCV should undergo further testing, evaluation, and counseling. The counseling for both infections includes ways to reduce the risk of transmission to others and encouragement to have sexual partners tested.^{3,4} Additionally, counseling should focus on reducing disease progression, both through antiviral treatment and non-pharmacologic methods. For example, alcohol consumption should be avoided in patients with HCV because both can hasten liver function decline.⁴ Patients diagnosed with HIV should be counseled about the risk of and signs and symptoms of opportunistic infections.³

In addition to direct clinical care, pharmacists are involved in the public health aspect of HIV and HCV care by participating in the screening and detection process for both viruses.^{6,7} Pharmacists assist in identifying patients and patient groups who should be screened for HIV and/or HCV, conducting the screening test when applicable, counseling patients on the results of the screening test, assisting other health care providers with interpretation of screening results, and linking patients to further care if the screening test returns positive.

Case

Scenario 1.6.1

You are a pharmacist practicing in a busy clinic setting. One of your primary roles is to counsel patients who are newly diagnosed with infectious diseases, including HIV and HCV. Your counseling points during these encounters generally include an overview of the viral infections, prevention of transmission, and general points of treatment.

CC: “My new fiancée wanted me to get ‘checked up’ by the doctor before we got married.”

Patient: RC is a 55-year-old male (70 in, 200 lb) who works as a car mechanic in Georgia. At his fiancée’s request, he saw his usual PCP who ordered a number of lab tests. He has now received new diagnoses of HIV and HCV infection from his physician and is presenting to the clinic pharmacist.

HPI: Presented to clinic one month ago. No significant complaints at that time or at this visit. Patient denies any history of rash, fever/chills, night sweats, and jaundice.

PMH: Hypertension (x 5 years); HIV (diagnosed at this visit); Hepatitis C (diagnosed at this visit)

FH:

- Father: died at age 75 from a MI, had prior hypertension and dyslipidemia
- Mother: died at age 76 from a CVA, had prior hypertension
- Siblings: One brother, 58 years old, alive with hypertension and dyslipidemia
- Child(ren): One son, 25 years old, alive and well

SH:

- Reports drinking one 12 ounce bottle of beer per day
- Denies current smoking, but smoked one-half pack per day for 10 years and quit 10 years ago
- Denies current illicit drug use, but did inject heroin “just one time” in the mid-1980s

Sexual History:

- Identifies as heterosexual and has been sexually active since 18 years old
- Monogamous during prior 15 year marriage to a woman
- For the last five years, has had vaginal, anal, and oral sex with multiple female sexual partners until meeting current fiancée six months ago
- Has not participated in oral, anal, or vaginal sex in current relationship with fiancée, but has been monogamous

SDH: RC is English-speaking with a high-school diploma (with a few trade school courses). His annual income (with fiancée) is approximately \$75,000. He lives in a single family home with his fiancée.

Medications:

- Hydrochlorothiazide 25 mg daily
- Ibuprofen 200 mg every 6 hours as needed for “aches and pains”

Allergies: NKDA

Vitals:

- BP (seated) 128/76 mm Hg
- Other vital signs WNL

Labs:

- HIV screen: positive

- HIV viral load: 56,783 copies/mL
- CD4 count: 562 cells/mm³
- HIV genotype: wild type virus
- HCV screen: positive
- HCV viral load: 125,000 IU/mL
- Hepatitis A antibody: Nonreactive
- Hepatitis B surface antigen: Nonreactive
- Hepatitis B surface antibody: Nonreactive
- Hepatitis B core antibody: Nonreactive
- Other labs: WNL
- Other health screenings: negative

Case Questions

1. The patient understands how he potentially contracted HIV due to his sexual activity in the last year, but he wants to know if that's how he got Hepatitis C as well. How do you counsel him about the similarities and differences in the transmission risks of the two viruses?
2. Now that the patient knows how HIV and Hepatitis C are transmitted, he desperately wants to know how to prevent transmitting it to his fiancée. What options are there for both him and his fiancée to lessen transmission risks?
3. RC is unsure that he is ready to start treatment for either disease yet. Besides further discussing treatment details with him, what non-pharmacological recommendations can you give him to help lessen his risk of disease progression?
4. How would you counsel the patient about the possibility of being a blood and/or organ donor?
5. Because a diagnosis of HIV and HCV can be devastating and carries negative stigma, what steps can you take to help the patient cope with the new diagnosis?

Author Commentary

HIV and HCV are two common viral illnesses that create significant morbidity and mortality. Pharmacists play several important roles in the care of these patients. As modeled in the above case, pharmacists are commonly involved with an interdisciplinary healthcare team and will counsel patients shortly after a diagnosis is made. While the bulk of this conversation usually centers on antiviral medications the patient will receive for treatment, there are other important counseling points that pharmacists should make regarding transmission risks and other management considerations besides antiviral treatment, including but not limited to determining need for vaccinations, particularly Hepatitis A and B, and maintaining a healthy lifestyle.

Patient Approaches and Opportunities

Receiving a diagnosis of HIV and/or Hepatitis C can be a devastating situation for a patient. There is still stigma surrounding diagnoses of these diseases even though they are treatable. Therefore, it is important to assess how the patient is coping mentally and emotionally during this counseling session. It might be prudent to offer a follow-up clinic visit or phone call to discuss some of the necessary counseling points if the patient seems overwhelmed. Additionally, keep in mind possible cultural concerns that might cause patients to feel uncomfortable talking with the pharmacist about these particular diagnoses. Asking the patient what you can do to make them more comfortable for this discussion is prudent. One important counseling point at this time of diagnosis is discussion about risks of transmission with sexual partners. The patient's sexual partner(s) should be screened for all sexually transmitted infections, including HIV and HCV. This is also an ideal time to counsel a patient on safer sexual practices, such as barrier methods, as well as the possible use of pre-exposure prophylaxis if the sexual partner is not infected with HIV.

Important Resources

Related chapters of interest:

- [Communicating health information: hidden barriers and practical approaches](#)
- [Interprofessional collaboration: transforming public health through team work](#)
- [Drawing the line: preventing sexually transmitted infections](#)
- [An ounce of prevention: pharmacy applications of the USPSTF guidelines](#)
- [Sex education: counseling patients from various cultural backgrounds](#)

- [PrEPare yourself: let's talk about sex](#)

External resources:

- Department of Health and Human Services. Guidelines for the use of antiretroviral agents in adults and adolescents living with HIV. <https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv/0>
- American Association for the Study of Liver Diseases/Infectious Diseases Society of America. HCV Guidance: Recommendations for testing, managing, and treating Hepatitis C. <https://www.hcvguidelines.org/>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.7: Ethical decision-making in global health- when cultures clash

TRIGGER WARNING

This case discusses an actual event that some people may find disturbing. Those who have suffered gender-based violence, childhood abuse, or other physically or emotionally traumatic events are encouraged to prepare emotionally before proceeding.

Disclaimer: This case is a critical analysis of a topic that most readers will view as an act of gender-based violence. A critical analysis of the subject requires reviewing it from several different perspectives, not all of which are disapproving of the subject. Although the subject is discussed from varying perspectives, the authors are in no way supportive of the practice.

Acknowledgement: We gratefully acknowledge the assistance of Rachel Purdy, PharmD 2019, for her assistance with reviewing and editing this case.

Learning Objectives

At the end of this case, students will be able to:

- Explain why pharmacists practicing in the Global South cultural skills to address ethical and cultural situations not usually seen in pharmacy practice.
- Describe the limitations of pharmacy's usual ethical principles and codes of conduct that may not apply in communities practicing female genital cutting (FGC)
- Apply the six-step ethical decision-making process to determine an appropriate course of action when faced with cultural differences while serving on a medical mission trip

Introduction

Pharmacists planning to serve on a short-term medical mission trip often prepare by reviewing the pathophysiology and treatment for diseases they do not normally see as part of their usual practice. Being clinically prepared to serve on a mission trip is vital, but so is preparing for cultural situations that will be new and maybe disturbing.

This case discusses the practice of surgically altering the external female genitalia as part of a cultural or religious practice. Most in the Global North, including the WHO, refer to this practice as female genital mutilation (FGM). The term "mutilation" may be problematic because it suggests that harm is intentionally inflicted, and not all cultures see the practice as intentionally harmful. Consequently, this case study uses the term female genital cutting (FGC). Regardless of terminology, the WHO indicates that FGC creates risks for both short-term and long-term adverse consequences including pain, excessive bleeding, fever, infection, dyspareunia, difficult childbirth, and psychological problems.¹

FGC is practiced primarily in a wide swath across Africa from the Atlantic Coast to the Horn of Africa and is highly variable in where it is practiced, how it is practiced, and who practices it.² Although prevalence is highest in Somalia, Egypt, Sudan, Mali, Guinea and Sierra Leone, all with rates >80%, different regional, ethnic, or tribal groups within and between countries may differ widely in how (or even if) they practice FGC.² Although most countries in which FGC is practiced are majority Muslim, the practice is not limited to (or required by) Islam. While the practice is widespread in sub-Saharan Africa, it may also occur in immigrant communities in Europe, North America and Australia.

In most countries, girls are cut before 15 years of age and often below the age of five. In other regions, the event may not happen until shortly prior to, or even after, marriage. There is great variability in who performs the procedure. For example, in Senegal, nearly all FGC is performed by traditional practitioners, while in Egypt, nearly 80% is performed by trained health personnel.²

Although the WHO describes FGC as a violation of women's human rights,³ in communities where it is practiced, FGC is often seen as providing a sense of identity within the culture and is a purifying rite that signals a girl is of good moral character.^{4,5} Although Westerners often believe the practice is intended to inhibit female sexual pleasure or preserve female virginity, women who have undergone the procedure often disagree.⁶⁻⁸

Case

Scenario 1.7.1

You have arrived in Mali, West Africa on your first medical mission trip. Your medical team consists of two physicians (one of whom serves as your medical director), a physician assistant, a pharmacist (you), one of your pharmacy student interns, and a nurse. The village has not only welcomed your team to the village but has treated you as honored guests. Over the weeks, the clinic your team has worked in has been highly successful and you have treated nearly 120 patients for malaria and various other tropical diseases.

One evening, your team is invited to an enormous village celebration with feasting and dancing. As you are enjoying yourself, one of your team members quietly comes up to you and tells you the celebration is to honor a village girl who will undergo FGC in the morning.

Your team gathers back at your bunk house to discuss the situation and what you all should do. Frankly, most of you are angry with your medical director for not informing you beforehand this was a situation the team could possibly find itself in. The team is divided as to what to do. However, it is clear to all team members that they are working in a culture that they do not understand.

In the end, the team cannot come to any agreement about what to do. You go to bed for the night and try in vain to get some sleep under your bed net. The next morning, you go to clinic as usual and try to act like nothing has happened.

Case Questions

1. What are some culturally expected practices you must adhere to in order to live an ordinary life in your own community?
2. Adherents to FGC may not be persuaded by the facts presented in an educational program to end FGC. Provide some examples of beliefs some Americans may have that may be impervious to generally accepted facts.
3. What body modification practices are common in the Global North?
4. Who does your body belong to?
5. FGC is gradually becoming less common as countries become more developed and people become more educated. Should Western aid workers continue to work to end the practice or should we just let those in the Global South work this out for themselves and let it end naturally?
6. If the mission team in the case had wanted to intervene to end FGC in their service community, what would they need to do?

Author Commentary

Usually, the role of the pharmacist on a global health mission trip is to ensure the smooth running of the pharmacy, consult with team members on drug therapy decision making, and to counsel patients on their medicines. But there will be times when no one on the team is adequately prepared to deal with situations that may arise. Providers' clinical education may not include adequate cultural humility training, leading to providers making negative judgments about the community they serve. Consequently, all team members, including pharmacists, should be able to negotiate these cultural differences and adopt a process for ethical decision making when cultural differences may impair patient care.

Practicing global health or volunteering for a medical mission trip to a medically underserved region can be a life-changing experience. Volunteers often gain a deeper understanding of themselves and their place in the world. They also come to recognize that what we think of as normal in the US is not always considered normal somewhere else. As a result, any actions taken (or not taken) may not be the same as what you would do in the usual course of your pharmacy practice in an American setting. The case presents an extreme practice situation which most Americans would certainly not see as normal. However, the process of working through and identifying an ethical response will be similar no matter if the cultural divide is about FGC or if the patient refuses

drug therapy due to a belief that his illness is caused by evil spirits. The take home messages in nearly every case will be the same:

1. Have a process by which to identify and address culture-based ethical problems;
2. Realize there is rarely a right answer for what to do. You may have to make the best choice among several unappealing options; and
3. Learn and appreciate the acronym SPADFY (Some People Are Different From You).

Patient Approaches and Opportunities

Ethical analysis requires time and reflection. The gut instincts that we experience around complex and controversial situations are more likely related to our moral system than an ethical framework. Purtilo presents a formalized scheme called the Six-Step Ethical Decision-Making Process, to take a situation apart, organize your thoughts, and come to an ethical decision.¹⁰ The process includes the following steps:

Step 1: Gather Relevant Information

Factors that may help the team decide a course of action may include:

- How does the local community view FGC? This is part of getting the story straight. Best practices in global health make it a requirement to understand the community the team serves in. Proposing solutions before we even understand what may or may not even be a problem is bad practice. Cultural practices need to be understood within their own contexts, and not compared to an outsider's perspective on that culture so as to denigrate it. Cultures don't exist to make observers or visitors feel better, they exist to provide those who live within them a set of cultural rules, values, behaviors, and practices that make daily life in that culture possible. So, if one can see past one's own cultural biases (e.g. FGC is barbaric) it becomes possible to see (if not necessarily agree with or understand) that FGC may assist women to live within the culture they inhabit.
- Why do cultures practice FGC? If we can see the practice through the eye of the local community, we learn that it is not the parents' intention to mutilate their daughters, nor is it necessarily the result of living in a deeply patriarchal society. Rather, FGC is often seen as a proper, socially acceptable, cultural expectation that is thought to be purifying.
- Are there existing interventions that have been shown to be helpful? If the decision is made to intervene, gathering needed information will require knowing what experts have found to be helpful. Making clinical recommendations that are not evidence-based is unprofessional. So is making cultural recommendations that are not evidence-based. Ending FGC involves changing cultures, not just educating villagers about the harms of a long-standing practice. Although cultures do change (e.g., cigarette smoking in public in the US is now prohibited) they may change slowly and from the bottom up, not from a top down program. One thing is clear – if an intervention is to have any hope of success, it must be focused as a community change effort. The most effective work appears to have been done by a non-governmental organization called Tostan working in West Africa.¹¹

Step 2: Identify Type(s) of Ethical Problem(s) Occurring

After collecting relevant information, it is critical to determine what type(s) of ethical problem(s) are occurring in your particular situation. There are four types of ethical problems:

- Ethical distress occurring due to an existing barrier to acting on an obvious solution;
- Ethical distress occurring because two or more solutions are possible; however, value is lost if only one solution was acted upon;
- Dilemma of justice occurring because resources or benefits are not distributed fairly; and
- Locus of authority ethical problem occurring because someone other than yourself holds the power to decide and act.

A situation may result in more than one ethical problem. However, this FGC case is a good illustration of a locus of authority ethical problem.

Step 3: Use Ethical Approaches and Tools to Analyze the Problem

During their training, most health professionals were provided some basic tools to evaluate and proceed when faced with an ethical situation, but when faced with the cultural divide posed by FGC, these tools may not be sufficient.

Consider the Pharmacist's Code of Ethics provided by APhA.¹² The Code discusses the covenantal relationships with the patient

but since a young woman about to undergo FGC is not actually the pharmacist's patient, much of the Code does not readily apply. The eight principles listed are the desirable characteristics that American society desires from a pharmacist practicing in the US. Could or should the Code be applied to an individual who is not your patient and who is not residing in the US?

Next, consider the ethical principles of autonomy, beneficence, non-maleficence, and justice that most practitioners are familiar with. Since Westerners may frequently believe FGC impairs a woman's sexual pleasure, perhaps the best ethical argument against it is justice. However, ethnographic studies of the sexual experiences of women who have undergone FGC found that some women continue to have a satisfying sex life while others think the Western world's emphasis on sexual pleasure and orgasm is misguided.^{5,13}

Step 4: Explore the Practical Alternatives

Up until this step, you have had the opportunity to decide what you *should* do. The next step is to take all the information and tools and determine what you *can* do in this situation. This step encourages brainstorming of all possible actions and non-actions. It is important to not oversimplify the possible actions. One option to prevent tunnel vision is to bring those who should be involved in this decision to the table to make sure all perspectives are represented in the alternatives. Please keep in mind that non-action is a form of decision. Doing nothing should be considered as a possible alternative.

Steps 5 & 6: Complete Action and Evaluate

Once an action/non-action is taken, take time to engage in personal reflection. Conduct an evaluation of how effective your process was in helping the team to come to a decision. Determine what the outcome of your action was. This is important for personal and professional growth. Additionally, lessons learned may be passed to other healthcare providers and educators.

Important Resources

Related chapters of interest:

- [The cough heard 'round the world: working with tuberculosis](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Sex education: counseling patients from various cultural backgrounds](#)
- [The Sustainable Development Goals and pharmacy practice: a blueprint for health](#)
- [Unexpected souvenirs: parasitic and vector-borne infections during and after travel](#)
- [You say medication, I say meditation: effectively caring for diverse populations](#)
- [Experiences of a Caribbean immigrant: going beyond clinical care](#)
- [Uncrossed wires: working with non-English speaking patient populations](#)
- [Medicine for the soul: spirituality in pharmacy](#)
- [Travel medicine: what you need to know before you go](#)
- [The great undoing: a journey from systemic racism to social determinants of health](#)

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.8: Safe opioid use in the community setting- reverse the curse?

Learning Objectives

At the end of this case, students will be able to:

- Describe the epidemiology of the opioid crisis in the 21st century
- Identify patients at risk of opioid misuse when provided patient information
- Identify harm reduction and safety solutions for opioid users
- Discuss the opportunities for policy, legislative, or regulatory changes that will improve the pharmacist's ability to optimize the public's health regarding opioid use

Introduction

Opioids – prescription and illicit – are the main driver of drug overdose deaths in the US. Opioids were involved in 42,249 deaths in 2016, and opioid overdose deaths were five times higher in 2016 than 1999.¹ In recent years, there has been a surge in deaths due to alcohol, drug abuse, and suicide, which some have described as “deaths of despair.”² Among the individuals involved in this trend are persons living with chronic pain and persons living with a substance use disorder.

The current opioid misuse crisis is made more complex for pharmacists because of concerns that many of those abusing prescription opioids, or even heroin, had a prescription medication as their entry point.³⁻⁶ Prior to 1990, heroin addiction began with heroin use, but since that time, heroin addiction has primarily begun with prescription opioids.⁴ An estimated 25 million adult Americans suffer daily from pain and require some analgesic to provide relief.⁷ With liberalization of opioid prescribing practices, many opioid-naïve patients were exposed to opioids. One in four patients receiving long-term opioid therapy in a primary care setting struggles with an opioid use disorder.⁸ This set the stage for a generation of patients unexpectedly misusing opioid medications.

Educating patients about their medications has been required of all Medicaid patients and, in many states, all patients (see Important Resources for more information). With controlled medications, patient education and counseling is even more critical. Pharmacists' cognitive services are increasingly recognized as an essential added clinical value for patients. While the opioid misuse epidemic facing the country requires a multidisciplinary approach, community pharmacists are key players in ensuring patients use these medications safely and, if there are concerns, linking patients to needed care.

Case

Scenario 1.8.1

You are a floater pharmacist working at a new pharmacy on the weekend in the outskirts of an urban area.

CC: “I would like to have this prescription filled.”

Patient: BC is a 39-year-old male (70 in, 79.5 kg) with pain in his back and leg associated with a multi-car accident. He reports that he frequently experiences pain associated with his work as a temporary concrete layer.

HPI: Toward the end of the day, BC approaches your pharmacy counter with a new prescription for Percocet 10/325 #60 with directions to take 1-2 tablets every 4-6 hours as needed for severe pain. The prescription is from Dr. Stevens at the local urgent care facility.

PMH: Depression; anxiety; ADHD; alcohol use disorder; allergic rhinitis

FH:

- Mother (alive) with T2DM, depression, and HTN
- Father (deceased) with history of alcohol use disorder, HTN, cirrhosis

SH:

- Reports tobacco use
- Reports alcohol use
- Living alone and not in the same city as the rest of his family

Medications:

- Sertraline 50 mg daily
- Alprazolam 1 mg TID
- Cetirizine 10 mg daily (OTC)

Allergies: NKDA

SDH: BC has been working but does not have benefits. He had been covered by Medicaid previously, but since moving to this state, he hasn't applied for it.

Additional context: Since he is a new patient, BC is asked to provide more comprehensive medical information. A new state law requires prospective review of the prescription drug monitoring program (PDMP) before dispensing any opioid prescription. His report is shown below.

Medication and dose	Instructions	Quantity (date)	Refills remaining	Prescriber	Pharmacy
Hydrocodone/ acetaminophen 7.5/ 325 mg	1 tab every 4-6 hours prn pain	15 (10 days ago)	0	Smith	ABC
Hydrocodone/ acetaminophen 7.5/ 325 mg	1 tab q6 hours prn pain	30 (15 days ago)	0	Jones	123
Methylphenidate 10 mg	1 tab BID	60 (15 days ago)	0	Jones	123
Hydrocodone/ acetaminophen 5/325 mg	1 tab every 4-6 hours prn pain	30 (20 days ago)	0	Hite	XYZ
Alprazolam 1 mg	1 tab TID	90 (20 days ago)	1	Hite	XYZ

Case Questions

1. What do you conclude based on BC's PDMP review, and why?
2. What is BC's ORT score and what does that score mean?
3. Based on the risk factors identified above, what is your assessment of the patient's risk of opioid misuse?
4. What is the risk for unintentional overdose?
5. Will you dispense the Percocet for BC? Why or Why not?
6. What treatment options are recommended for this patient to reduce harm? Who else needs to be included in the treatment plan discussion? What can be done today?
7. What resources are available for referral? What resources are available for education for the patient?
8. What are the discussion points that need to be conveyed to the patient and caregivers, including opioid safety and medication use?
9. What implications and/or opportunities for policy makers exist surrounding this case?

Author Commentary

The opioid epidemic was accelerated by liberalized opioid prescribing practices in the US. Therefore, as the medication experts in the healthcare system committed to safe use of all medications, pharmacists are the key professionals to ensure safe use of prescription opioids, and evidence-based care for patients with pain. This case highlights the difficult role that pharmacists play when dispensing medications to a patient for whom it may not be appropriate. The hope is that pharmacists will rely upon their professional judgement in evaluating the information available to them – the PDMP record, identified risk factors with the patient, and concomitant disease states and medications – in order to ensure the patient's safe use of the medication. Although opioids are particularly high-risk medications, the vigilance promoted in this case study has relevance for the role in safe medication use that pharmacists play with other medications that carry significant risk as well.

Patient Approaches and Opportunities

Pharmacists serve as gatekeepers of safe medication use for patients. This includes verifying the appropriateness and safety of the medication being dispensed and educating patients about appropriate use of that medication.⁹ Screening followed by brief interventions (SBIRT) have been shown to be feasible and effective.^{10,11} Therefore, pharmacists are well positioned to make essential contributions to the prevention and management of opioid misuse among their patients through screening and patient education.¹²⁻¹⁴

Naloxone prescribing, strengthened pharmacist-prescriber communication channels, increased pharmacist access to patient health information (shared EHR), and access to prescription monitoring program data have created opportunities for pharmacists to practice the SBIRT model with opioid users.¹⁶

Important Resources

Related chapters of interest:

- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [Communicating health information: hidden barriers and practical approaches](#)
- [Alcohol use disorder: beyond prohibition](#)
- [Harm reduction for people who use drugs: A life-saving opportunity](#)
- [A stigma that undermines care: opioid use disorder and treatment considerations](#)

External resources:

- Guidelines:
 - TIP 63. <https://store.samhsa.gov/product/TIP-63-Medications-for-Opioid-Use-Disorder-Full-Document-Including-Executive-Summary-and-Parts-1-5-/SMA18-5063FULLDOC>
 - Overdose toolkit. <https://www.samhsa.gov/capt/tools-learning-resources/opioid-overdose-prevention-toolkit>
- Websites:
 - Prescribe to Prevent <http://prescribetoprevent.org/>
 - Prevent-protect <https://prevent-protect.org/>
 - Prescription Drug Abuse Policy System (PDAPS) <http://pdaps.org/>
 - Healthy People 2020: HP2020 – Substance Abuse. <https://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives>
- Screening Tools:
 - Opioid Risk Tool. <https://www.drugabuse.gov/sites/default/files/files/OpioidRiskTool.pdf>
 - The Screener and Opioid Assessment for Patients with Pain-Revisited tool (SOAPP-R). <http://www.ccwjc.com/Forms/Chronic%20Pain/SOAPP-R.pdf>
 - The Brief Risk Interview. <http://www.painmed.org/2014posters/abstract-206/>

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Opioid Risk Tool

This tool should be administered to patients upon an initial visit prior to beginning opioid therapy for pain management. A score of 3 or lower indicates low risk for future opioid abuse, a score of 4 to 7 indicates moderate risk for opioid abuse, and a score of 8 or higher indicates a high risk for opioid abuse.

Mark each box that applies	Female	Male
Family history of substance abuse		
Alcohol	1	3
Illegal drugs	2	3
Rx drugs	4	4
Personal history of substance abuse		
Alcohol	3	3
Illegal drugs	4	4
Rx drugs	5	5
Age between 16–45 years	1	1
History of preadolescent sexual abuse	3	0
Psychological disease		
ADD, OCD, bipolar, schizophrenia	2	2
Depression	1	1
Scoring totals		

Derived (with permission) from Webster LR, Webster RM. Predicting aberrant behaviors in opioid-treated patients: preliminary validation of the Opioid Risk Tool. *Pain Med*. 2005;6(6):432–42.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.9: The 'state' of things- epidemiologic comparisons across populations

Learning Objectives

At the end of this case, students will be able to:

- Apply epidemiologic principles to a public health scenario
- Compare and contrast disease occurrence and health determinants across populations
- Generate conclusions about the health of a population using epidemiologic and pharmacoepidemiologic data
- Explain the dynamic relationship between health data, epidemiology, and public health policies

Introduction

Given pharmacy's increasing role in research, shaping public policy, and assessing medication use and safety across populations, learning fundamentals of epidemiology and pharmacoepidemiology is a critical component of pharmacy education. This is especially true for pharmacy students interested in pursuing careers in research, industry, administration, or public policy where these skills are consistently required.

Epidemiology is *"the study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems."*¹ Pharmacoepidemiology, a subset of epidemiology, is *"the study of the use and effects/side-effects of drugs in large numbers of people with the purpose of supporting the rational and cost-effective use of drugs in the population thereby improving health outcomes."*² As drug experts, pharmacists are already routinely responsible for monitoring drug use and safety across various populations. Additionally, the increasing complexity of health systems and push for a more holistic approach to health – not just drugs – necessitates an increased focus on epidemiology training for pharmacists. This is underscored by the fact that research – and by extension epidemiology and pharmacoepidemiology – serves as the tenth and all-encompassing essential service of public health.³

In every professional setting, pharmacists are at least in some part responsible for monitoring diseases and drug use. For some pharmacists, the population may be the patients in their community pharmacy, while for other pharmacists, their population may include serving millions of individuals while working for the FDA. Regardless of the setting, you will work with diverse, often ill or at-risk, populations reinforcing the importance of skills and experience in monitoring disease and medication use across populations. To gain further appreciation for epidemiology and its utility, consider the opioid epidemic. Pharmacists lead the charge in tracking opioid utilization, identifying high-risk patients, exploring the risk/benefit of opioids, and designing/assessing various public health policies aimed at mitigating the crisis (e.g., opioid reversal strategies). Examples of pharmacy-related epidemiology and pharmacoepidemiology duties include:

- Monitoring levels of disease and/or drug utilization
- Guiding distribution of resources
- Discovering exposures that facilitate or mitigate patterns in disease and/or drug use
- Providing useful information on the beneficial and harmful effects of drugs, including risk/benefit information.

Case and Case Questions

You have volunteered to serve as a consultant for a new non-profit agency. The agency's mission is to "improve the health of the population by promoting safe and effective use of medications." The agency wants to establish roots in a particular state, but isn't sure where to go. The agency's board of trustees has asked you to provide a recommendation as to which state they should go to and start their work. Your task is to compare various state pairs and provide a recommendation (with rationale) as to which you think is the "unhealthier" state in regards to a particular health topic. Utilize the various data (outcomes, risk factors, determinants) available on the Henry J Kaiser Family Foundation (KFF) State Health Facts web site (<https://www.kff.org/statedata/>) and specific to that particular health issue to make your decision. Your recommendation should be written into a clear, focused format that you will present to the board of trustees.

The board of trustees has provided you with several topics of interest and several state pairings for your analysis (see **Table**). For each of the eight topics, pick one pairing, and conclude which state is “worse” concerning that particular topic (aka, “which state is in more need of your non-profit agency’s help”). The board has asked that you analyze a different state pair for each topic. Use the outcome data available on KFF State Health Facts website to support your decision.

Topics	Pairings
Immunizations	District of Columbia vs. Georgia
Alcohol and drug dependence	Nevada vs. Delaware
Opioid epidemic	New Mexico vs. New Jersey
Prescription drugs	Arkansas vs. Illinois
HIV/AIDS	Mississippi vs. Utah
Medicare	New York vs. Wyoming
Medicaid and CHIP	Hawaii vs. Ohio
Women’s health	Alabama vs. Massachusetts
COVID-19	California vs. Kentucky
	Colorado vs. Pennsylvania
	Texas vs. Connecticut

1. Topic #1: Immunizations
2. Topic #2: Alcohol and Drug Dependence
3. Topic #3: Opioid Epidemic
4. Topic #4: Prescription Drugs
5. Topic #5: HIV/AIDS
6. Topic #6: Medicare
7. Topic #7: Medicaid and CHIP
8. Topic #8: Women’s Health

Author Commentary

Epidemiology and pharmacoepidemiology are extremely broad and complex fields, and this activity is only meant as an introduction into these areas. These concepts are crucial to developing an appreciation for population health, its intricacies, and the many factors that contribute to health. As you delve into these comparisons, you should be careful in how you interpret and present the available data. Also, understand that the available data is limited and that you must make the most informed decision you can with imperfect and incomplete information. This closely reflects what happens in the real world. Lastly, when reviewing topics, you will notice many disparities and inequalities across state populations. As you find these differences, especially large differences, begin to consider how state-level policies and culture may contribute to these found differences. In this way, you will be extending the focus of this activity to include additional related epidemiological concepts such as determinants of health and health disparities.

Patient Approaches and Opportunities

Epidemiology is the “scientific arm” of public health and is essential for assessing trends and patterns of disease and medication use across populations. Pharmacists are responsible for safe and effective medication use, and accordingly, must lead the effort in monitoring medication utilization and safety in populations. A strong foundation in epidemiological concepts is a critical component for pharmacists to have so that they can perform public health research and make sound conclusions when interpreting data. Ultimately, such foundational knowledge will lead to enhanced ability to create effective and meaningful public

health programs and policies.

Important Resources

Related chapters of interest:

- [More than just diet and exercise: social determinants of health and well-being](#)
- [Medication safety: to 'error' is human](#)
- [The Sustainable Development Goals and pharmacy practice: a blueprint for health](#)
- [Open-door policy: a window into creation, implementation, and assessment](#)
- [Prescription for change: advocacy and legislation in pharmacy](#)
- [A pharmacist's obligation: advocating for change](#)

External resources:

- Websites:
 - Henry J Kaiser Family Foundation. *State Health Facts*. <https://www.kff.org/statedata/>. Accessed November 30, 2018.
- Books and Chapters:
 - Centers for Disease Control and Prevention. *Principles of Epidemiology in Public Health Practice; 3rd Edition*. <https://www.cdc.gov/opphss/csels/dsepd/ss1978/ss1978.pdf>. Accessed November 30, 2018.
 - Jean Carter and Marion Slack. Chapter 10: Epidemiology and Disease in *Pharmacy in Public Health: Basics and Beyond*. Pages 197-226.

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3. The Public Health System & the 10 Essential Public Health Services. <https://www.cdc.gov/stltpublichealth/publichealthservices/essentialhealthservices.html>. Accessed November 30, 2018.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.10: Saying what you mean doesn't always mean what you say- cross-cultural communication

Learning Objectives

At the end of this case, students will be able to:

- Recognize cultural aspects that influence and impact patient care
- Apply a skills-based approach using concepts of cross-cultural care to a patient case
- Determine how to approach unfamiliar cultural situations focusing on communication, awareness of cultural differences, adopting information, eliciting patients' illness experiences, assessing how decisions are made, and determining health beliefs
- Utilize tools to elicit illness experiences and cultural information to tailor and improve patient care

Introduction

Culture can be defined as the *"integrated pattern of human behaviors that includes thoughts, communications, languages, practices, beliefs, values, customs, courtesies, rituals, manners of interacting and roles, relationships and expected behaviors of a racial, ethnic, religious or social group; and the ability to transmit the above to succeeding generations."*¹ Each individual is part of an extraordinary number of cultures at any given time, influencing one's beliefs, attitudes, and lifestyle. It is impossible to know every culture and how that culture may impact a person's health. The ability to account for the myriad of different cultures, especially from provider and public health perspectives, is an important but at times overwhelming task.

Unfortunately, cultural misunderstandings are common when seeking to provide care for individuals or a community, potentially leading to poor health and health disparities. Accordingly, the challenge for healthcare professionals is to acknowledge this barrier and seek to bridge cultural divides. Applying cross-cultural care is important for patient care, public health, and policy development, and those designing and implementing interventions for patients or large-scale interventions for populations need to keep in mind those groups with non-mainstream cultures and those who may have cultural aspects vastly different from their own. So, how can you provide care for a community you don't understand? Cross cultural care involves *"learning how to transcend one's own culture in order to form a positive therapeutic alliance with patients from other cultures."*²

Cross-cultural care requires utilizing a skills-based approach, focusing on communication, being aware of cultural differences, adopting information, eliciting patients' illness experience, assessing how decisions are made (e.g., the role of family), and determining health beliefs.³ Cultural aspects that may influence the health of an individual encompass a range of variables and include more than just ethnicity.⁴ Underlying beliefs and assumptions develop at a young age and are determined by the environment that a child grows up in. As an adult, perspectives on what is respectful, what is rude, and even what is fun, is determined by culture. As a result, a patient's actions with regards to their own health are inherently connected to their culture.⁵ For example, consider your own assumptions on the topic of eating dinner: (1) What time should dinner be eaten? (2) What should dinner consist of? (3) Is it okay to eat dinner alone without waiting for your family? (4) Is it okay to skip dinner? (5) Is it okay to leave food on your plate? (6) Where do you eat dinner? (7) Can the television be on?

Various tools are available to help clinicians extract important cultural information from their patients, leading to better understanding and tailored care. The 4Cs is a tool often used by clinicians to "elicit the patient illness experience" and consists of asking patients:

- What do you **CALL** your problem?
- What do you think **CAUSED** your problem?
- How do you **COPE** with your condition?
- What **CONCERNS** do you have regarding your condition?⁶

Case (part 1 – communication)

Scenario 1.10.1

You are a pharmacist in a family medicine clinic.

CC: “My physician, Dr Simmons, sent me here.”

HPI: Sijin Kim is a 38-year-old South Korean male (69 in, 165 lb) who reports he immigrated to the US ten years ago to provide a better life for his family. He is a new patient and was diagnosed with T2DM six months ago, and is having a very hard time keeping his glucose and HgA1c controlled.

FH:

- Married with 2 children
- Father died at age 45 from a motor vehicle accident
- Mother alive with T2DM and osteoporosis

SH:

- 1-2 alcoholic beverages daily
- ½ pack cigarettes per day
- No illicit drug use

Surgical history: N/A

Medications:

- Metformin 1000 mg PO BID (started 6 months ago)
- Glipizide 10 mg PO daily (started 1 month ago)
- Ginseng 200 mg PO daily (started 8 years ago)

Labs:

- POC glucose (today): 224 mg/dL
- HgA1c: 8.2%

Additional Context: Mr. Kim arrives to your clinic and greets you with a bow. You politely smile back, say hello, and ask him to have a seat. You begin by reviewing his past medical, family, and surgical history as well as reviewing his medications with him. The visit seems to be going great, Mr. Kim can speak English and is nodding with understanding to everything you are saying to him. You ask him about medication adherence and if he is taking all of his medications; he says, “yes,” with a smile. You ask him if he ever misses any of his medication doses, and he says, “no,” with a smile. You proceed to review his diet and exercise regimen with him and realize he is likely eating too many grains – causing his T2DM to be uncontrolled. He confirms that he eats rice with every meal. You review the plate method with him and show him how much rice he should be eating for each meal. Mr. Kim nods with understanding and smiles, saying he will do as told. The rest of the visit goes equally smoothly. Mr. Kim is able to repeat the general instructions back to you and smiles and bows as he leaves, being very gracious and thankful for the time taken to see him. You begin working on documenting the visit, and have a funny feeling that this visit was way too “easy.” You begin questioning if Mr. Kim was just saying what he thinks you wanted to hear.

Case Questions

1. What type of miscommunication may have happened with Mr. Kim?
2. What cultural factors may have influenced this interaction?

Case (part 2 – perception of illness/disease)

Mr. Kim returns to clinic four weeks later. He brings his medications and his glucose log with him as he was instructed at the last visit. You find that his glucose is still very out of control. You check his medications to confirm adherence and find that he seems to have more pills than he should in his bottles. When you ask him if he has missed any doses, he politely smiles and says he rarely forgets and tries his best to take his medications according to the instructions. You feel you need to dig deeper into the root of his non-adherence.

Case Questions

3. Using the 4C's model, what questions should you ask to find out more about Mr. Kim's view of his illness?

Case (part 3 – cultural dimensions of health)

After asking some questions, you find out that Mr. Kim has been speaking with his mom in South Korea and despite agreeing to follow your instructions, is listening to advice from his mother, since she also has the same diagnosis. She told him that she doesn't always take her medicine and her doctor doesn't correct her, so it must be okay to miss it sometimes. She also says she has had diabetes longer than him, and she is okay, so he will be fine if he does the same. He says that he has seen his mother live with this problem for many years and doesn't think it's anything to be too concerned about.

Case Questions

4. Why do you think Mr. Kim would listen to his mother's advice over yours?
5. What is Mr. Kim's perception of his illness and how has that been impacted by his life experiences?

Case (part 4 – cross-cultural care in population health)

You acknowledge the advice from his mother, and ask if it is okay for you to provide your own professional advice that may be a little different from his mother's. You spend the rest of the visit educating Mr. Kim about the importance of taking the medications as prescribed and why you really want him to try to take all his medications when they are scheduled. He responds positively, and it seems you have really reached him this time. Just to be safe, you go back and also review the diet and nutrition advice regarding his rice consumption, and he nods with understanding.

Mr. Kim returns in another four weeks. His glucose seems better but is still not at goal. After checking his medications, you are happy to find that he seems to have been adherent. Before adding or adjusting his medications, you want to find out if his lifestyle habits have changed at all. Upon some questioning, you find that his diet and exercise has not improved and Mr. Kim is still eating a full bowl of rice at every meal. When you ask him why, he says, "I have to set a good example for my children during meal time." Additionally, Mr. Kim comes from a country that is predominantly Asian, where it is near impossible not be served lots of grains at a meal when eating out. Currently, he still lives in a community in the US that has a high Asian population that has retained a very similar diet. He states that he understands what you are asking him to do, but it is very hard.

Case Questions

6. What is Mr. Kim's greatest barrier currently and how might you help him overcome it?
7. What cultural factors will you consider when developing your community educational materials? What resources could you use to create your educational materials?
8. How will you gain trust within the Asian community that you are reaching out to?

Author Commentary

As a pharmacist, you will likely encounter patients from a wide variety of cultures, often with patients that belong to more than one culture. It is vital that you understand how each patient's cultural make-up influences his/her actions both in and outside of your interactions with that patient. Although it is impractical to try and become competent in all cultures, understanding the right questions to ask to understand your patient's frame of mind is a crucial skill. You will be better equipped to meet your patient's

individual needs if you respect his or her culture and establish a trusting relationship with each of your patients. Lastly, remember, culture is influenced by a patient's larger community; so sometimes, it is important to ask not only about the patient in front of you, but also about aspects of his or her life and community.

Patient Approaches and Opportunities

As you consider and review the chapter case questions, recognize that depending on where and how someone grew up, the answers to these questions may all be drastically different. These different answers, for example, may influence how someone perceives your advice if he or she is being counseled on lifestyle changes for diabetes mellitus. Apply this train of thought to what your patients may be thinking as you provide medical advice and try to help them with their medications. Pharmacists must consider how patients will interpret and implement their suggestions or whether their suggestions will be ignored.

In many cultures, respecting elders is more important than listening to healthcare providers – an important point to remember when trying to change someone's behavior. Although it is impossible to touch upon all of the ways culture impacts a patient's health, it is essential to recognize that culture is always an underlying factor to consider. Cultural awareness and competency allows pharmacists to provide better care to patients from various cultural backgrounds.

Important Resources

Related chapters of interest:

- [More than just diet and exercise: social determinants of health and well-being](#)
- [Ethical decision-making in global health: when cultures clash](#)
- [The cough heard 'round the world: working with tuberculosis](#)
- [The 'state' of things: epidemiologic comparisons across populations](#)
- [You say medication, I say meditation: effectively caring for diverse populations](#)
- [Uncrossed wires: working with non-English speaking patient populations](#)
- [Experiences of a Caribbean immigrant: going beyond clinical care](#)
- [The great undoing: a journey from systemic racism to social determinants of health](#)

External resources:

- Websites:
 - U.S. Department of Health & Human Services and Office of Minority Health – Think Cultural Health <https://www.thinkculturalhealth.hhs.gov>
 - U.S. Department of Health & Human Services, Health Resources & Services Administration – Culture, Language, and Health Literacy: <https://www.hrsa.gov/cultural-competence/index.html>
 - Centers for Disease Control and Prevention – Cultural Competence
 - EthnoMED: <http://ethnomed.org/>
- Journal articles:
 - O'Connell M, Korner E, Rickles N, and Sias J. ACCP White Paper: Cultural Competence in Health Care and Its Implications for Pharmacy, *Pharmacotherapy* 2007;27(7):1062–1079.
- Books:
 - *The Spirit Catches You and You Fall Down* by Anne Fadiman
 - *Essentials of Cultural Competence in Pharmacy Practice* by Kimberly Vess Halbur
 - “Kleinman's Questions” derived from Kleinman A. *Patients and healers in the context of culture: an exploration of the borderland between anthropology, medicine, and psychiatry*. Berkeley, CA: University of California Press; 1980.
- Games:
 - Barna: <https://sites.lsa.umich.edu/inclusive-teaching/barna/>
 - BaFa BaFa: <https://www.simulationtrainingsystems.com/corporate/products/bafa-bafa/>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.11: The cough heard 'round the world- working with tuberculosis

Introduction

Tuberculosis (TB) is the world's leading killer amongst infectious diseases. In 2017, 1.6 million people died from TB, making it one of the top ten causes of mortality worldwide.¹ TB is preventable and curable, but elimination remains a challenge. Worldwide, the regions with the highest number of cases of TB are Southeast Asia and Africa, accounting for approximately two-thirds of the reported cases.² As such, the elimination of TB is a key priority of the WHO,³ included in the Sustainable Development Goals (SDGs) with a target to "end the epidemics of AIDS, TB, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases" by 2030.³

In the United States specifically, public health initiatives within health departments and TB control programs had a tremendous impact on the prevention and management of TB.⁵ Although it remains a concern, the rate of TB in the United States continues to drop slowly. A total of 9,105 TB cases (a rate of 2.8 cases per 100,000 persons) were reported in the US in 2017. This is a decrease from the number of cases reported in 2016 and the lowest case count on record.⁶ However, due to the ongoing public health implications of the disease, TB remains a focus area in the Healthy People agenda for the nation. Included in the specific topics and objectives are goals to reduce TB, increase the completion rate of all TB patients who are eligible to complete therapy, and to increase the percentage of contacts to sputum smear-positive TB cases who complete treatment after being diagnosed with latent TB infection (LTBI) and initiated treatment for LTBI.⁷

Elimination of TB will require a worldwide effort to decrease transmission for active cases, access to quick treatment, as well as strategies to screen for and manage latent TB infection. The USPSTF recommends screening for latent TB infections in populations at increased risk.⁸ Cases of active TB must be treated quickly, as the disease is contagious, with an estimated capacity of a single person with untreated and active disease to infect as many as 15 people within a year.¹ Drug resistance is also a concern, with over half a million new cases of TB in 2017 demonstrating resistance to first-line therapy, including 82% with multi-drug resistant TB (MDR-TB).¹ Effective treatment requires adherence to complex medication regimens over several months.⁹ Management requires trained health care providers who are able to provide long-term, patient-centered care.

Case (part 1)

Scenario 1.11.1

BR is a 38-year-old female nurse who works full time at a local academic hospital within the United States. A couple of months ago, she traveled to India in order to spend time with her family and experience the community in which her parents were raised. During the month BR spent in India, she was in close contact with various friends and family, as well as many members of the local community. Upon her return to the US, BR returned to her job as a bedside nurse, moved in with her fiancé, and resumed volunteering on the weekends at a local homeless shelter. She is also excited for an upcoming trip to Singapore but is anxious about the 24 hours of flying that it will involve.

Due to her role as a healthcare worker, BR was recently required to be screened for TB during the hospital's annual TB testing period. Much to BR's surprise, the healthcare worker who read her PPD skin test reaction stated that she had a positive result of 11 millimeters. Thinking that this could be a false-positive test, BR agrees to get further testing completed including a chest x-ray

1. How common is TB worldwide and within the US? Which countries have the highest incidence of TB? Which countries have the highest rates of drug resistant TB?
2. What are some factors that have contributed to the rise and fall of TB infections around the world? What are some barriers to combating the disease worldwide?

3. How are tuberculin skin testing reactions interpreted? Does the classification of positive tuberculin skin test reactions differ depending on patient risk factors?

Case (part 2)

Scenario 1.11.2

After some consideration, BR decided that she was too busy planning her rapidly approaching Singapore trip to squeeze in doctors' appointments and, therefore, would postpone any further testing until her arrival back in the US. She argued that "she didn't look sick and had no cough" and could not possibly be infectious. Five days later BR boarded a flight from John F. Kennedy airport in New York to Hong Kong International airport and then a separate flight from Hong Kong to Singapore Changi airport. Enduring the 24 hours of travel she proceeded to enjoy her trip according to her itinerary and two weeks later reversed her trip from Singapore to Hong Kong and then from Hong Kong to New York.

4. Which factors influence the extent to which communicable diseases are transmitted? How is TB transmitted, and why is that important to public health?
5. How do you explain to BR some of her risk factors for contracting TB?

Case (part 3)

Scenario 1.11.3

Upon returning to the US, BR's chest x-ray showed abnormalities and her physicians performed further testing to confirm a diagnosis of TB and to obtain a sample isolate. BR did not understand how this could be possible, since she did not have any symptoms of an active infection. While awaiting further testing on her isolate by the CDC, BR was started on standard therapy for the treatment of TB and was advised by her providers to refrain from any further travel. It was also advised that any family members, friends or coworkers that had been in close contact with BR also be tested for TB. Additional testing by the CDC of her TB isolate confirmed MDR-TB, and BR's physicians told her that she would have to undergo more extensive treatment in isolation until she was no longer infectious.

6. What are considered common treatments for active TB and what is the typical duration of treatment?
7. What are risk factors for multidrug resistant TB? How does treatment differ if a patient is diagnosed with MDR-TB?

Case (part 4)

Scenario 1.11.4

With the knowledge that a passenger onboard recent international flights had been traveling with active TB infection, the CDC began trying to track down all passengers and crewmembers who were on the commercial flights of which BR had been a passenger. It was highly suggested that these individuals also get tested for TB after having been in a confined space for many hours with an infected person. The CDC placed a specific focus on the flights from New York to Hong Kong, due to the duration of the flight, and extra attempts were made to get in touch with the passengers seated close to BR during the time of travel. Additionally, the hospital where BR was actively employed had to alert all employees and patients, who had been in close contact with her for extended periods of time, to consider undergoing additional TB testing.

8. What is the risk of communicable diseases being transported on board an aircraft? Does the duration of the flight have any impact on risk?
9. What is the incubation period for TB, and does that affect the timing of testing for individuals who may have been exposed?
10. Is there a role in the future for a coordinated, international approach to data collection and operational decision-making, and what is the role of the US in these discussions?
11. Does the US government have the authority to isolate or quarantine individuals traveling to and from the US if they are deemed a public health risk?

Author Commentary

Treatment for TB is a long and challenging process. It is difficult for patients and for the health systems that are funding these long, expensive treatments. While the WHO and others are spearheading shorter MDR-TB treatment regimens,¹⁰ challenges still exist in bringing the disease under control.¹¹ Newer drugs that are less toxic, require shorter treatment durations, and are less expensive are needed. While new drugs are being developed, it is a slow process. The required research and development prospects are thin,¹ and pharmaceutical industry spending in this area is continuing to decline.¹²

At one time, TB was viewed as a disease of despair – affecting those with low-incomes, substandard housing, and little access to care. TB is still linked with health disparities; however, with as many as 36% of those with active TB going unrecognized in a world with millions of people with active disease,¹ TB is a disease that knows no boundaries. This puts the US population at risk. It is clear investments also need to be made into TB screenings and prevention. While UN SDGs aim to end the TB epidemic by 2030, major gaps exist in the funding required to reach this goal.¹²

As health care providers, we need to be able to recognize the signs and symptoms of TB and to link our patients to care, but that is not enough. We need to be advocates for our patients and for our communities. We need to speak up and work with policymakers to tackle social determinants of health and TB. As pharmacists, we call ourselves the “drug experts.” TB is a disease with massive drug impacts, and if we truly are public health professionals and drug experts, we cannot stay silent.

Patient Approaches and Opportunities

While the therapeutics of TB treatment is not the focus of this chapter, it is important for public health providers – especially pharmacists – to understand patients’ treatment burden. Drug-susceptible TB treatment typically lasts at least six months with the intensive phase including four drugs.⁹ Drug-resistant TB regimens are generally considerably longer – some as long as 24 months – often with regular injections.¹⁰ These drugs also have significant side effects, and patients with the disease are often grappling with stigma. This is concerning as patients who abandon treatment midcourse not only do not improve, but they are more likely to develop a resistant form of TB. As such, it is vital that patients are adequately prepared and that trusting relationships are built so that our patients can seek guidance if support is needed during the treatment process.

Adherence to TB treatment is vital because with proper treatment TB is curable. It is important that as pharmacists we properly counsel patients on their medications and help them develop adherence strategies. These concepts need to be reinforced during every pharmacy visit. Patients who are not compliant with their medications should be connected with a public health department to investigate enrolling in a Directly Observed Therapy (DOT) program where a healthcare worker can observe the patient taking medications each day. The Missouri Department of Public Health and Senior Services, for example, has an eDOT program where healthcare providers can remotely observe the patient taking medications either in real time or via recordings.¹³

While overcoming the worldwide TB burden can seem like a daunting task, pharmacists have an opportunity to play a vital role in the battle against TB. By building relationships with our patients, we can help them to process and overcome stigma, work together to navigate cultural differences and help to increase adherence. We are also at the front lines and can help to identify patients with TB symptoms and refer them to the appropriate healthcare provider.

Important Resources

Related chapters of interest:

- [Ethical decision-making in global health: when cultures clash](#)
- [An ounce of prevention: pharmacy applications of the USPSTF guidelines](#)
- [HIV and hepatitis C co-infection: a double-edged sword](#)
- [Sex education: counseling patients from various cultural backgrounds](#)
- [The Sustainable Development Goals and pharmacy practice: a blueprint for health](#)
- [Unexpected souvenirs: parasitic and vector-borne infections during and after travel](#)
- [Travel medicine: what you need to know before you go](#)

External resources:

- Missouri Department of Health and Senior Services Tuberculosis Case Management Manual: <https://health.mo.gov/living/healthcondiseases/communicable/tuberculosis/tbmanual/pdf/Chap9.pdf>
- WGBH (Television station: Boston, Mass.) & Vulcan Productions. (2005). *Rx for survival: A global health challenge*. Boston, MA: WGBH Boston Video. DVD available or available online at: <http://www.pbs.org/wgbh/rxforsurvival/index.html>
- Global TB report through WHO: https://www.who.int/tb/publications/global_report/en/
- CDC Respiratory protection fact sheet: <https://www.cdc.gov/tb/publications/factsheets/prevention/rphcs.htm>
- Rise of MDR-TB in Russia: <https://www.ncbi.nlm.nih.gov/books/NBK62453/>
- WHO Drug-Resistant TB: <https://www.who.int/tb/areas-of-work/drug-resistant-tb/global-situation/en/>
- CDC Tuberculin Skin Testing fact sheet: <https://www.cdc.gov/tb/publications/factsheets/testing/skintesting.htm>
- Tuberculosis and Air Travel: Guidelines for Prevention and Control: <https://www.ncbi.nlm.nih.gov/books/NBK143710/>
- CDC Isolation and Quarantine: <https://www.cdc.gov/quarantine/aboutlawsregulationsquarantineisolation.html>

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13. Missouri Department of Health and Senior Services Tuberculosis Case Management Manual. 2018. Available from: <https://health.mo.gov/living/healthcondiseases/communicable/tuberculosis/tbmanual/pdf/Chap9.pdf>. Accessed October 26, 2018.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.12: More than just diet and exercise- social determinants of health and well-being

Learning Objectives

At the end of this case, students will be able to:

- Explain the definition of social determinants of health
- Identify the broad factors that influences an individual's health status important to public health
- Compare and contrast determinants of health that impact overall health and well-being specific to unique patient populations
- Identify patient specific needs related to determinants of health using a holistic approach

Introduction

Our health is determined by more than just our genetics and our physical well-being. In fact, according to the World Health Organization (WHO), health is not limited to the lack of disease but includes an individual's physical, mental and social states.¹ The leading causes of death worldwide include heart disease, pulmonary disease and diabetes,² and these non-communicable diseases are impacted by our personal behavior and by larger factors such as where we live, our education level and our ability to access care. However, in the US and beyond, inequalities in these environments and social factors create health inequities.

According to the CDC, social determinants of health (SDH) are the conditions and circumstances surrounding an individual's life that can affect their health outcomes.³ Healthy People, the US government's agenda for improving health outcomes,⁴ defines these conditions as places in which people thrive or are adversely affected.⁵ Health disparities and health inequity exist when differences lie among these environments, particularly where obstacles to good health are many and great. Equity is *"the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically."*⁶ Thus, health equity exists when access to resources linked to good health is equitable and fair, regardless of social status.⁷ Health inequities result from differences in SDH and unequal distribution of resources. Health equality is achievable when health inequities are addressed accordingly. SDH impact health disparities, defined as the differences seen in health outcomes as a result of an individual's disadvantages, whether social, economic, or environmentally.⁸ Such negative outcomes include increased illnesses, lower quality care, higher mortality rates, and greater health care costs.

In order for populations and individuals to achieve health, many factors must be considered. This is clear when looking at the many outcomes and objectives of Healthy People 2030. Healthy People 2030 provides a framework that helps to identify resources and tools to address SDH. The framework consists of five key determinants – economic stability, education access and quality, social and community context, health care access and quality, and neighborhood and built environment – all of which exhibit factors that can dictate an individual's health-associated risks and outcomes.⁵ Healthy People 2030's core objectives include a subset of high-priority objectives called Leading Health Indicators that all address SDH, health disparities, and health equity.⁹ Globally, there is also a concerted effort to improve the lives, health and well-being; the Sustainable Development Goals (SDG) were developed to ensure a sustainable future and to assist in achieving health for all by fighting poverty and inequalities. Good health as a human right should be obtainable by all. Thus, SDG 3 addresses health and well-being at all ages.¹⁰ There are multiple factors for health care providers to consider when providing care. It is especially pertinent to consider how socioeconomic status (e.g., income, education, occupation) impacts health, particularly when considering how it influences the ways individuals interact with their environment. For example, how might income affect health care access and utilization? How might education influence health literacy and the ability of an individual to feel empowered and engaged in their own health? Furthermore, how might differences in SDH contribute and exacerbate health disparities? These are important considerations we, as practitioners, must understand in order to aid others in achieving their full health potential.

Case

Scenario 1.12.1

You are a clinical pharmacist at a family medicine ambulatory care clinic.

CC: "I'm here for a follow-up appointment."

HPI: AJ is a 45-year-old, Hispanic male (69 in, 82 kg) who comes into the clinic today for an appointment to manage his medications and ensure his disease states are controlled.

PMH: T2DM; hypertension; COPD; high cholesterol

FH:

- Mother: alive, with T2DM
- Father: alive, with T2DM and HF
- Brother with pre-diabetes
- One daughter

SH:

- Drinks alcohol socially
- Previous smoker (1.5 PPD), quit 2 years ago
- Denies illicit drug use

Surgical history: N/A

ROS: (+) Chronic cough with sputum production

VS:

- BP 144/88 mmHg
- HR 60 bpm
- RR 16/min
- Temperature 37°C
- Pulse oximetry 93% on room air

Labs (drawn at last visit 1 month ago):

- Na 135 mEq/L
- K 4.2 mEq/L
- Cl 108 mEq/L
- CO₂ 26 mEq/L
- BUN 19 mg/dL
- SCr 1.1 mg/dL
- Glu 168 mg/dL
- Ca 9.6 mg/L
- Mg 3.6 mg/L
- A1c: 7.8%

Medications:

- Metformin 500 mg – 2 tablets PO BID
- Hydrochlorothiazide 25 mg – 1 tablet PO daily
- Lisinopril 20 mg – 1 tablet PO daily
- Atorvastatin 40 mg – 1 tablet PO daily
- Fluticasone/salmeterol 100/50 mcg – 1 inhalation BID

- Albuterol 90 mcg HFA – 1-2 puffs every 4-6 hours as needed

SDH and additional context: AJ is married and has a five-year-old daughter. He was born in the US, and his parents are immigrants from Mexico and made barely enough to support him and his younger brother. He grew up in a relatively under-resourced neighborhood in a small apartment with 1 bedroom, 1 bathroom, and a shared living/eating space. He often likes to tell short stories about how he grew up when he comes for clinic visits, describing how they had to squeeze his whole family into one bedroom at night, and often, how his little brother would accidentally kick or punch him in his sleep. He talks about growing up eating fast food hamburgers because they were inexpensive and his parents didn't have much time to cook for him and his brother. Additionally, there was only one grocery in his neighborhood that was over five miles away, and since his parents did not own a car, they rarely went. He remembers sometimes the water ran a little strange colored from the faucets, that streets were almost always covered in trash, and that many buildings were broken down and not maintained. He and his brother did not play outside often because it was not safe to be out after dark, there was barely any clean park space, and so he would be at home and either watch tv or play card games with his brother.

AJ works as a bank teller at a local bank. He finished high school with average grades, but decided to go work immediately because his parents were getting old and he had to make money to support their life and health care. He mentioned once that he considered applying for college but could not afford it, and therefore, never bothered. His wife is a stay at home mom, taking care of the apartment and their daughter. She previously worked as a bank teller (this is how they met), but had to quit her job to take care of their daughter because child care was not affordable.

As an adult and father, AJ has made enough money to move out of the neighborhood he grew up in. His family now lives in two-bedroom apartment in a neighborhood that has a fairly average income. There are two grocery stores within walking distance, and one decent school that his daughter will eventually be able to go to. AJ makes sure he provides everything he can for his daughter, giving most of his income to pay for healthy meals, saving up for school supplies and eventually college, and providing her with toys and clothes that she needs. They use the second bedroom for her so she can have her own bed and room. Additional income goes to his mother and father, who are now retired and living off very little. Because most of his money goes to his family, he has very little for himself, often still eating the fast food hamburgers that he grew up on to leave the healthy meals for his family. Additionally, AJ sometimes skips picking up his medications because they can cost a lot. He will take medications every other day to make them last longer. AJ is quite proud of what he has been able to provide for those he loves, especially because he was given so little as a child.

Case Questions

1. What aspects of AJ's childhood may have influenced his current health status? Elaborate on each aspect and explain why it influences his current health status.
2. Compare and contrast the childhood AJ had and the one his daughter now has. What does she have (that AJ didn't) that might impact her health in the future?
3. How do AJ's current responsibilities impact his health? What advice would you give him as his healthcare provider?
4. Consider the neighborhood AJ grew up in and all those who lived in this neighborhood. How do you think this neighborhood's poor resources and state may have impacted all of its residents?
5. What can pharmacists do to help patients and communities with low-resources?

Author Commentary

Health disparities and inequities drive negative health outcomes and have long-lasting impact on patients and entire communities. When communities are not healthy, it not only has negative implications for an individual's health status, but it also has adverse effects on the community's economy, safety and education. This creates a negative cycle as these same issues can further health disparities divides. As pharmacists, we must care for the patients in front of us, but in our ever-expanding roles as public health professionals, we must also begin advocating for our patients and communities. We must educate ourselves on the implications of subpar and disparate housing, food access, parks and recreation, safety and violence, and education, as we must use our knowledge for advocacy and policy change a local, regional, national and international levels.

Patient Approaches and Opportunities

As pharmacists, we can do our best to optimize medication therapy; however, it is critical to think about the larger picture and the social determinants of health that are influencing a patient's lifestyle and environment. Before making lifestyle-change

recommendations, it is vital to consider what is possible for the patient to accomplish. Pharmacists must remember to recommend culturally appropriate diet and lifestyle changes that are within the realm of possibility for a patient so they have the ability to follow them. Additionally, pharmacists have the potential to make an impact at the population-health level by utilizing their patient-care experiences to advocate for larger community or district-level policy changes.

Important Resources

Related chapters of interest:

- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Communicating health information: hidden barriers and practical approaches](#)
- [Plant now, harvest later: services for rural underserved patients](#)
- [The 'state' of things: epidemiologic comparisons across populations](#)
- [Only a mirage: searching for healthy options in a food desert](#)
- [Digging deeper: improving health communication with patients](#)
- [Let your pharmacist be your guide: navigating barriers to pharmaceutical access](#)
- [The great undoing: a journey from systemic racism to social determinants of health](#)

External resources:

- Websites:
 - Healthy People 2030: <https://www.healthypeople.gov/>. Accessed February 18, 2021.
 - Sustainable Development Goals: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>. Accessed February 20, 2019.
 - Federally Qualified Health Center locator <https://findahealthcenter.hrsa.gov/>. Accessed February 20, 2019.
 - Find a local foodbank with Feeding America <https://www.feedingamerica.org/>. Accessed February 20, 2019.
- Games:
 - Spent: <http://playspent.org/>. Accessed February 20, 2019.
- Videos:
 - UNNATURAL CAUSES...is inequality making us sick? Place Matters. Ellie Lee, Producer and Director, Andrea Williams, Editor. California Newsreel 2008. https://www.unnaturalcauses.org/about_the_series.php. Accessed February 20, 2019.

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Glossary and Abbreviations

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1.13: Deciphering immunization codes- making evidence-based recommendations

Learning Objectives

At the end of this case, students will be able to:

- Recall the resources available from the CDC pertaining to adult vaccination recommendations
- Determine an appropriate vaccination plan using a patient case
- Identify important education points to provide to patients during consultations

Introduction

According to the 'Oath of the Pharmacist,' pharmacists promise to devote their lives to others through the pharmacy profession. A major part of this oath is to consider the welfare of humanity and assure optimal outcomes in all patients.¹ Although pharmacists may work in different practice settings, each has the opportunity to be a key component of disease prevention by becoming a vaccine advocate.² Pharmacists can promote the use of vaccines by providing immunization administration services, screening patients in each practice setting, conducting patient counseling, and provide widespread public education regarding vaccine use.² Although pharmacists are immunizers in every state, it is important to review your state's laws regarding pharmacist delivered immunization services. Up-to-date information can be found on the American Pharmacists Association's website.³

There are many resources the pharmacist can turn to for vaccines schedules and patient education documents. The CDC's website will link the pharmacist to many different materials for providers and patients regarding many different topics for vaccines.⁴ One of these documents that the pharmacist should always review are the immunization schedules that are available for children and adults. The CDC has different documents organizing the immunization schedules by age groups or comorbid conditions. They also include documents that outline contraindications, as well as a mobile phone application for quick access to the vaccine schedules.⁵ The CDC website also has links for more patient-friendly information (including an easy to read schedule) as well as a library of previous immunization schedules, specific changes for each year's recommendations, and specific Advisory Committee on Immunization Practices' recommendation.^{6,7} An emerging role for pharmacists is in travel health, which include the administration of travel vaccinations. The CDC has a comprehensive resource for clinicians to identify the appropriate vaccines each patient needs depending on the country of travel.⁸

Another resource available to pharmacists is a website from the Immunization Action Coalition (IAC). The IAC works closely with the CDC to provide information and education to health care providers and the community to increase immunization rates.⁹ On this website are many documents for both health care providers and patients on many different vaccine related topics including documentation, vaccine hesitancy, temperature logs, promotional material, and much more. There are also educational resources for patients in other languages such as Spanish, Korean, Russian and French.¹⁰ A valuable resource included in the website is the 'Ask the Experts' section where experts from the CDC answer questions pertaining to each vaccine, as well as administration, billing, safety, and recommendations.¹¹

Case

Scenario 1.13.1

You are a pharmacist in a pharmacotherapy management clinic.

CC: "This is my first time here."

HPI: Michael Smith is a 57 year old male presenting to your clinic.

PMH: T2DM; hypertension; gastroesophageal reflux disease; seasonal allergies

FH:

- Mother: HTN, T2DM, died at 71 (NSTEMI)
- Father: HLD, COPD

SH:

- Tobacco: denies
- Alcohol: socially, one or two drinks weekly

Medications:

- Metformin 1000 mg PO BID
- Atorvastatin 40 mg PO daily
- Lisinopril 10 mg PO daily
- Cetirizine 10 mg PO daily
- Omeprazole 20 mg PO before breakfast

Allergies: NKDA

Vitals:

- BP 146/98 mmHg
- HR 88 bpm

Labs:

- BMP (fasting)
- Na 142 mmol/L
- K 4.5 mm/L
- Cl 102 mmol/L
- CO₂ 27 mmol/L
- Glucose 153 mg/dL
- BUN 18 mg/dL
- SCr 0.97 mg/dL
- Ca 8.8 mg/dL
- HgA1c 9.1%

Blood count:

- WBC 9.2 K/mcL
- RBC 4.03 M/mcL
- Hgb 14.3 gm/dL
- Hct 37.2%

Liver function:

- Alk Phos 80 U/L
- ALT 20 U/L
- AST 24 U/L

Other information:

- 10 year ASCVD Risk: 15.3%
- Vaccination history per state registry: none

Case Questions

1. One of the first items you evaluate in your clinic are the vaccinations each patient is eligible to receive. Using the most recent vaccine CDC schedule, which vaccines would the patient be eligible to receive?
2. What if the patient was 67 years old? What vaccines would you screen for?
3. The patient is interested in receiving the above vaccines, but states that he is concerned with overwhelming his immune system. How would you respond to this patient?
4. The patient found his immunization record from his previous primary care provider. According to his immunization record, he has received one dose of the hepatitis B vaccine two years ago. How should you proceed with finishing his vaccination series?
5. The patient reports that he will be traveling to Egypt with his family and is curious to what vaccines are recommended prior to his trip. Using the CDC's travel health database, what vaccines would the pharmacists potentially recommend, depending on the activity of his trip?
6. A physician in your clinic asks you if patients taking methotrexate for rheumatoid arthritis are eligible to receive Zostavax®. How would you answer this?

Author Commentary

Pharmacists are well respected and easily accessible, particularly those involved in community pharmacy. Hence, they often function as a first resource for many people and parents and serve, not only to counsel patients on current medications, but also to suggest over-the-counter products for common ailments such as fever and sore throat. Because some infectious diseases may initially present with mild symptoms common among many infections, it is imperative that pharmacists are aware of which diseases are endemic or circulating in the community, so they may ask relevant questions to assess disease exposure and vaccination status. Such conversations between the pharmacist and patient may result in patients receiving appropriate referrals and care to further prevent spread of vaccine-preventable diseases.

Patient Approaches and Opportunities

As pharmacists, it is important to consider the impact of infectious disease on the lives of our patients. Regardless of practice site, pharmacists can screen patients for immunizations for which they are eligible, recommend and counsel patients regarding the importance of immunization, educate on vaccine safety, and discuss concerns regarding myths related to vaccination. Pharmacists are uniquely positioned to provide immunization services within community pharmacies and outpatient clinics and should utilize opportunities to promote immunization and public health whenever possible.

Important Resources

Related chapters of interest:

- [Interprofessional collaboration: transforming public health through team work](#)
- [An ounce of prevention: pharmacy applications of the USPSTF guidelines](#)
- [Immunizing during a pandemic: considerations for COVID-19 vaccinations](#)
- [Staying on track: reducing missed immunization opportunities in the pediatric population](#)

External resources:

- Centers for Disease Control and Prevention. Immunization Schedules. <https://www.cdc.gov/vaccines/schedules/index.html>
- Centers for Disease Control and Prevention. Travelers' Health. <https://wwwnc.cdc.gov/travel>
- Immunization Action Coalition. <http://www.immunize.org>
- Centers for Disease Control and Prevention. Manual for the Surveillance of Vaccine-Preventable Diseases. <https://www.cdc.gov/vaccines/pubs/surv-manual/index.html>
- Centers for Disease Control and Prevention. Community immunity definition. <https://www.cdc.gov/vaccines/terms/glossary.html#commimmunity>

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1.14: Getting to the point- importance of immunizations for public health

Learning Objectives

At the end of this case, students will be able to:

- Define herd immunity and how unvaccinated individuals are protected
- Describe presumptive evidence of immunity
- Explain the timeline of an antibody response
- Describe counseling points to increase adult immunizations
- Discuss when and how to notify public health officials of suspected infectious disease cases

Introduction

Immunizations have led to the eradication of some of the world's most deadly diseases (such as smallpox) and to significant decreases in incidence of diseases such as rubella and measles. Total eradication is achieved when there is no circulating disease and no further measures to stop the disease are required. Despite significant gains toward the eradication of several infectious diseases, outbreaks may still occur, typically the result of an under-vaccinated population. In these populations, herd immunity (also known as “community immunity”), in which a sufficient proportion of the population is protected from a disease such that transmission among members is unlikely, is insufficient to protect unvaccinated members.^{1,2,3} The Office of Disease Prevention and Health Promotion's (ODPHP) has set several goals of reducing the number of vaccine-preventable diseases in the US. Pharmacists can play a large role in reaching such public health goals by understanding how immunizations confer protection, how diseases circulate in communities and counseling all patients to receive necessary immunizations as appropriate.⁴

In 2000, measles was declared eliminated in the US, although it was and still is endemic in other countries. However, since this time, the US has seen resurgence of this vaccine-preventable disease. Resurgence and resulting outbreaks are largely caused by introduction of the virus into a community from unvaccinated, overseas travelers, followed by disease transmission between unvaccinated individuals and those with an unknown vaccine history.^{5,6} Acceptable or presumptive evidence of immunity includes written documentation of vaccination, laboratory evidence of immunity, laboratory confirmation of disease or in some cases, the age of an individual.⁷ As an example, in April 2017, a measles outbreak was identified in a group of US-born children of Somali descent.⁸ An investigation into the outbreak later revealed that this population had been subject to misinformation about vaccines and as a result had developed significant fears about autism. Amidst the outbreak, susceptible, unvaccinated persons believed to have been exposed to the virus were treated with post-exposure prophylaxis with a measles vaccine or immune globulin as per the Advisory Committee on Immunization Practices (ACIP) guidelines.⁸ However, the development of an adequate immune response to a vaccine requires several weeks.

From a scientific perspective, effective vaccination involves the development of a strong antibody response. The primary exposure to an antigen of interest (or vaccine) requires B-cells to recognize the antigen, become activated and begin to produce antibodies specific to this antigen as well as memory B-cells. This process can take between one to two weeks. Hence, if an unvaccinated individual is exposed to a pathogen, it is likely that pathology may occur during this development period. Although a certain amount of protection is afforded after initial vaccination, booster vaccinations are often required to further develop memory B-cells. Such memory B-cells can then produce antibodies to the antigen of interest within one to three days with no notable pathology.

The CDC has developed standards for adult immunization practices which may be found on the CDC website.⁹ It is well known that many individuals, including adults, are hesitant to receive immunizations. The reasons for adult vaccine hesitancy may be due to a variety of factors, such as complacency (not recognizing the risk of disease), lack of convenience or lack of confidence due to concerns regarding vaccine safety.¹⁰ However, several studies have suggested that a key factor in adult immunization is a strong recommendation from their provider.¹¹ It is important to understand that a key factor in adults becoming immunized is a strong recommendation from healthcare providers. For example, instead of asking a patient “Are you interested in being vaccinated for pneumococcal disease today?” say “I see it is time you are vaccinated for pneumococcal disease, which can help

prevent pneumonia. If you give me a moment, I can prepare the vaccine for you and do it right now.” Pharmacists may also use the acronym SHARE to help them remember key counseling points:

- **S:** Share why the vaccine is recommended for that particular patient
- **H:** highlight positive benefits of the vaccine
- **A:** address patient questions in lay terms
- **R:** remind that vaccines not only protect the patient, but their loved ones around them
- **E:** explain the potential costs of disease.

Case

Scenario 1.14.1

You are a pharmacist in a community pharmacy.

CC: “I’m worried the flu shot will hurt my unborn baby.”

Patient: TF is a 24-year-old female (62”, 58kg), 12 weeks pregnant with her second child. Her first child is a four-year-old male and was diagnosed with autism spectrum disorder (ASD) when he was three years old.

HPI: TF is at the pharmacy to pick up her prescription for prenatal vitamins. She tells you that her physician recommended that she receive an influenza vaccine. She is hesitant as her first son is on the autism spectrum, and she has heard conflicting stories about vaccines and autism. She would like more information on how vaccines work before agreeing to receive the vaccine.

PMH:

- First pregnancy resulted in live vaginal birth with no complications
- Mild heartburn symptoms during both pregnancies

FH:

- Both parents alive but with unknown health status
- No siblings
- One 4 year old son with ASD, otherwise healthy

SH:

- No alcohol, tobacco, or illicit drug consumption
- Lives with fiancée and son

Medications:

- Prenatal vitamin PO daily
- Calcium carbonate antacid PO as needed for heartburn

Allergies: none

Vitals:

- BP 120/70 mmHg
- HR 65 bpm

Case Questions

1. Why is vaccination after exposure to infection not as effective as prior vaccination?
2. Why is it important for pharmacists to be aware of diseases circulating within their community of practice?
3. How would you respond to a patient that states they do not need to vaccinate because they are healthy and can fight off most

vaccine preventable diseases, such as influenza?

4. In talking with the patient, she states she stopped vaccinating after her son's ASD diagnosis. How would you discuss this with her?
5. Describe how you could use the acronym SHARE to address this patient's concerns for her unborn baby and today's recommendation for an influenza vaccine.
6. What other vaccination(s) will the patient need to receive during her pregnancy?

Author Commentary

Immunizations are the best way to protect the general public from the spread of communicable disease. Some diseases such as influenza have several unique strains and hence yearly influenza vaccines are needed. Other vaccines prevent diseases caused by pathogens that do not change significantly over time. Without herd immunity, a population has enough potential disease vectors for a pathogen to circulate easily and infect not only the unvaccinated, but also those too young to receive vaccination or people that may be immune compromised.

Because many people are vaccine hesitant and do not vaccinate themselves or their children there has been a resurgence in some diseases, such as measles. According to the CDC, only 91.1% of children between ages 19-35 months old have received a measles vaccines, short of the 95% desired, and only 47% of children between six months and 17 years receive an influenza vaccine, leaving a significant portion of the population vulnerable to this disease. Vaccine hesitancy continues despite changes in vaccine formulations removing the preservative thimerosal, which was once blamed for adverse effects (although this has been shown to be untrue.) Vaccines are now available in prefilled syringes so preservatives are not included. Vaccines also contain significantly few antigens than in previous years, as vaccinologists have discovered the primary antigens necessary in a vaccine formulation to confer appropriate protection from disease. The use of fewer antigens has been complemented by improved vaccine adjuvants that promote reliable cell mediated and humoral responses to vaccines.

Patient Approaches and Opportunities

Pharmacists are well respected and easily accessible, particularly those involved in community pharmacy. Hence, they often function as a first resource for many people and parents to gain information regarding healthcare. Thus, it is critical that pharmacists are aware of how immunizations can protect a population, especially those that are unable to receive immunizations. Pharmacists should be aware of a patient's concerns and potential hesitancy regarding vaccination and use the SHARE technique to help talk with patients. Such conversations between the pharmacist and patient may result in patients receiving appropriate referrals and care to further prevent spread of vaccine-preventable diseases.

Important Resources

Related chapters of interest:

- [Deciphering immunization codes: making evidence-based recommendations](#)
- [Interprofessional collaboration: transforming public health through team work](#)
- [An ounce of prevention: pharmacy applications of the USPSTF guidelines](#)
- [Immunizing during a pandemic: considerations for COVID-19 vaccinations](#)
- [Staying on track: reducing missed immunization opportunities in the pediatric population](#)

External resources:

- Centers for Disease Control and Prevention. Immunization Schedules. <https://www.cdc.gov/vaccines/schedules/index.html>
- Immunization Action Coalition. <http://www.immunize.org>
- Centers for Disease Control and Prevention. Manual for the Surveillance of Vaccine-Preventable Diseases. <https://www.cdc.gov/vaccines/pubs/surv-manual/index.html>
- Centers for Disease Control and Prevention. Community immunity definition. <https://www.cdc.gov/vaccines/terms/glossary.html#commimmunity>
- Centers for Disease Control and Prevention. Making the Vaccine Decision. <https://www.cdc.gov/vaccines/parents/vaccine-decision/index.html>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.15: Smoke in mirrors- the continuing problem of tobacco use

Learning Objectives

At the end of this case, students will be able to:

- Describe the prevalence of smoking in the United States
- List the health disparities in smoking prevalence
- Discuss the levels of influence that impact smoking behaviors
- Create a smoking cessation plan for an underserved patient

Introduction

Smoking is the leading preventable cause of death in the United States.¹ Approximately 14% of the adult population are current smokers.² The rate of smoking continues to drop yearly, but disparities exist. The prevalence of smoking in medically underserved communities remains high, particularly among populations experiencing homelessness. Rates of cigarette smoking among homeless adults are three to four times higher than the general population.³ The rate of smoking-induced death and disease among the homeless are also disproportionately high. Despite the high rate of smoking, homeless smokers do not differ from the general population in their desire to quit.³ Smokers with substance use disorder have an even higher prevalence and smoke at five times the rate of the general population.⁴ Between 70-90% of individuals receiving treatment for substance use disorder smoke cigarettes.⁴ The impact on death rates is significant, in fact they have twice the expected rate of deaths attributable to tobacco use than in the general population.⁵ Like smokers who are homeless, individuals with substance use disorder are interested in quitting.⁵

Smoking cessation services are not always offered to these populations due to the belief that quitting is a low priority or may interfere with substance abuse recovery. The literature supports that smoking cessation does not generally adversely affect substance use outcomes.⁶ Effective smoking cessation services for the medically underserved are needed to reduce tobacco-related health disparities.

Pharmacists are key advocates in assisting patients toward cessation. Quit rates are higher when a pharmacist is involved. Pharmacists are accessible in most communities and nicotine replacement product are available over the counter. Nicotine replacement products will help with the physical aspects of addiction, but patients need more than just a product when trying to quit. They need assistance with behavioral modification and support. In addition, patients need a program that is tailored to their specific needs. In order enhance the delivery of services, there are pharmacist-focused materials available through the Centers for Disease Control and Prevention.⁷

Also needed is a setting that promotes cessation. One must consider the social determinants of health when creating a program.⁸ If the program fails to be comprehensive and these factors are not addressed, disparities may persist.

Case

Scenario 1.15.1

You are a pharmacist that volunteers in a drug and alcohol rehabilitation facility for men. Many of the men desire to quit smoking, you want to help but wonder how to optimally provide services in a facility where it seems that smoking in part of the culture. The leaders of the facility turn to you as a great asset for this need. You are ready for the challenge and hope to create a program that addresses all of the factors that influence smokers' abilities to quit successfully. You excited to provide care to this population that smokes at a much higher rate than the general public.

CC: "I want to quit smoking!"

HPI: JS is a 54 year old white male (70 in, 80 kg) who started smoking when he was 10 years old. He is currently in a drug and alcohol rehabilitation program and heard that it is easier to stay away from the alcohol if he quits smoking at the same time.

PMH: HTN (10 years)

SH:

- History of substance use, in rehabilitation for excessive alcohol use
- Patient has smoked Marlboro one pack per day for 44 years. He has tried quitting in the past, cold turkey, and his longest time staying smoke free is two weeks. He started smoking again both times because of stress. This time he would like some help and is requesting the nicotine patch. He is highly motivated to quit, he rates his motivation a 10 on a scale of 10 and is somewhat confident in his ability to quit where he rates himself an eight on a scale of 10. His biggest motivation for wanting to quit is his health and the biggest barriers or concerns about quitting are stress and being around smokers.

FH:

- Father: alive with HTN and CAD
- Mother: Unknown

Medications:

- Hydrochlorothiazide 25 mg PO daily

Labs:

- BP 128/88 mmHg
- HR 64 bpm
- BMP normal

SDH: White male, divorced and was homeless for six months before he joined the rehabilitation program. His income last year when working was \$15,000. He is not currently working.

Additional context: Smoking cessation is a challenge for JS. Participants of the rehabilitation program live at the facility. The residents are not allowed to go anywhere without an escort/chaperone. Residents may smoke, but they must smoke outdoors. A smoke break is sometimes viewed as a "reward" because the patient is allowed outside of the building.

Case Questions

1. What is the prevalence of smoking in an underserved population? Those living in poverty? Those who are homeless? Those who drink alcohol or use other drugs?
2. What types of interventions have an impact on the smoking rates of individuals? On the smoking rates of communities? On the smoking rate of populations?
3. Describe how you would conduct a smoking cessation intervention for JS. How would you assess JS's stage of change? What are the levels of intervention to consider?
4. Using the socioecological model, discuss interventions that may be helpful in lowering the smoking rate in this population

in the drug and alcohol rehabilitation program. Describe individual level interventions, community level and policy level interventions that may have an impact.

Author Commentary

Guidelines for smoking cessation should be used in all populations who smoke.^{11,12} Smoking cessation programs have been successful in some of the hard to reach populations.¹³ Quitting smoking may be beneficial for other aspects of patients' health including substance abuse.¹⁴ Pharmacists should offer smoking cessation assistance to all patients who smoke.¹⁵ Providers must consider all aspects that influence cessation rates when offering services.¹⁶ Smokers who participate in a structured smoking cessation program are more likely to quit.¹⁷

Patient Approaches and Opportunities

Nicotine is a highly addictive compound. Cigarette smoking is one of the most challenging addictions. Most smokers want to quit and those who get help have higher quit rates. Pharmacists are in an ideal position to help.

Every smoker must be asked about their smoking status and desire to quit at each visit with a health care provider. Standardized screening allows this to be automatic and ensures no patient is excluded. Ideally patients may be provided with patient-centered tools for assistance with each quit attempt. These tools must target the behavioral and physical aspects of addiction.

It is not easy to quit and there is no perfect time to quit, but services should be offered. Pharmacists are in an optimal position to assist with smoking cessation. Pharmacists are one of the most accessible health care providers and have nicotine replacement therapy readily available in most circumstances. It may require multiple attempts, but each time the patient acquires cessation skills.

Important Resources

Related chapters of interest:

- [More than just diet and exercise: social determinants of health and well-being](#)
- [Communicating health information: hidden barriers and practical approaches](#)
- [Unintended consequences of e-cigarette use: a public health epidemic](#)

External resources:

- Healthy People 2030. Tobacco use. <https://health.gov/healthypeople/objectives-and-data/browse-objectives/tobacco-use>
- Fiore MC, Jaén CR, Baker TB, et al. *Treating Tobacco Use and Dependence: 2008 Update*. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. May 2008.
- US Preventive Services Taskforce. Interventions for tobacco smoking cessation in adults, including pregnant persons: US Preventive Services Task Force Recommendation Statement. *JAMA* 2021;325(3):265-279.

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1.16: Plant now, harvest later- services for rural underserved patients

Learning Objectives

At the end of this case, students will be able to:

- List barriers that make it difficult for rural residents to maintain their health
- Describe the unique challenges for patients and healthcare providers in rural settings
- Apply techniques to identify unmet healthcare needs when developing new clinical services in a rural community
- Design a pharmacologic and non-pharmacologic treatment plan for patients living in rural and underserved communities

Introduction

There are many different definitions for the term “rural.” The US Census does not define the term and instead delineates rural as any population, housing or territory not located within an urban area – essentially “*whatever is not urban is considered rural.*”¹ Since there is no widely agreed upon definition, the qualifications for rural healthcare funding opportunities may vary greatly depending on the definition that is used and may lead to disparate health conditions.²

There are many barriers for rural residents to maintain their health. Food deserts, defined as areas lacking access to affordable produce (fruits, vegetables), grains, and low-fat dairy products, is a prevalent issue and is common in rural areas. Consumers may be unable to access healthy foods because they are geographically isolated from a supermarket or do not have transportation; even if there is a grocery store nearby, the food products may not be affordable.³ Additionally, there is often a lack of facilities to support maintenance of health through exercise. Rural residents likely have less access to gyms/workout facilities or access to them is hindered by transportation issues. If there are opportunities, they are likely at the local community center and depend on resources such as money and workers to keep the program going.

Rural residents may have time constraints, transportation issues or other barriers that restrict their ability to obtain consistent healthcare. Access to medical facilities/specialists often involve traveling many miles and hours. Not only do patients often struggle to access healthcare and services in their communities, there is also a known shortage of healthcare professionals and especially specialists. Most residents have a limited number of healthcare workers that are taking care of a large population area. As such, specialist duties often fall on primary care providers. In some cases, there may not be an MD/DO in a rural clinic, and care may be consolidated to a nurse practitioner or physician assistant, depending on state law for independent practice. In other cases, the pharmacist may be the sole healthcare provider in a rural town with residents depending on their local pharmacist to assist in their care and coordination of services.^{4,5}

Finally, rural patients are more likely to be older, lack insurance, experience socioeconomic barriers, and have lower levels of health literacy; these factors culminate in higher rates of chronic diseases. Similarly, they are at increased risk for geographic isolation, limited job opportunities and have increased rates of health risk behaviors. These sets of barriers result in multiple barriers for optimal health for rural residents and provide health care workers with increased challenges when trying to manage the health of these patients.^{6,7} Given these challenges there is a great public health need for patients who live in rural areas and was that pharmacists can be involved in helping the medically underserved in rural areas.

Case

Scenario 1.16.1

You are a local pharmacist who is thankful to still have a pharmacy in town after a threat of it closing down a few years ago. You have heard about pharmacists managing patients' chronic diseases through collaborative practice agreements (CPAs) and think it would really benefit the local patient population. You wonder what the next step should be in possibly pursuing such a program.

CC: "My wife said I need that new shot for shingles even though I already had a shingles shot before."

Patient: SM is a 68-year-old Caucasian male farmer (74 in, 285lbs). He is semi-retired but still helps his son farm the land that has been in his family for generations. He is busy farming during spring, summer and fall. Winter is a slower time for him, but due to cold winters full of snow, it is sometimes difficult for him to get to town. SM grew up eating meals of meat and potatoes the kinds of meals he says "sticks to your ribs." His wife enjoys gardening, cooking and baking and a meal is never complete without dessert! She uses her garden produce for side dishes during the summer and early fall. Meal times are often sporadic during planting and harvest time. His wife has tried cooking healthy for him, but he admits to sneaking to the local cafe for a caramel roll or other treats to satisfy his sweet tooth. After funding was cut for the senior exercise program, they bought a treadmill and stationary bike a few years ago but he prefers exercise activities that are more social like they used to have at the Senior Center in town.

PMH: T2DM; hypertension; dyslipidemia; obesity

FH:

- Father: died at 88 from heart attack, history of T2DM, hypertension, dyslipidemia, osteoarthritis
- Mother: died at age 95 from a CVA, history of hypertension and osteoporosis

SH:

- 20 pack-year history of smoking (quit 26 years ago)
- Drinks one to two 12-oz beers on the weekend
- Exercise mainly is farm and yard work activities

Medications:

- Metformin 1000 mg by mouth twice daily
- 70/30 insulin 54 units in the AM and 27 units in the PM
- Lisinopril/HCTZ 20/25 mg once daily by mouth
- Acetaminophen 650 mg every 6 hours as needed for pain
- Refuses statin due to fear of muscle pain

Vitals:

- BP 122/84 mm Hg (sitting; repeat 120/86 mm Hg)
- HR 76 bpm (regular)
- RR 16/min
- Temperature 37°C

Labs:

- Basic metabolic panel:
 - Na 138 mEq/L
 - Cl 102 mEq/L
 - K 4.1 mEq/L
 - CO₂ 26 mEq/L
 - SCr 0.9 mg/dL

- BUN 14 mg/dL
 - Glucose 312 mg/dL
- Other electrolytes:
 - Mg 2.3 mEq/L
 - Phos 3.7 mg/dL
 - Ca 9.1 mg/dL
- Cholesterol:
 - Total 244 mg/dL
 - LDL 151 mg/dL
 - HDL 36 mg/dL
 - TC/HDL ratio 6.7
 - Trig 225 mg/dL
- Liver function tests:
 - AST 26 IU/L
 - ALT 29 IU/L
 - Total bilirubin 0.5 mg/dL
 - Albumin 3.7 g/dL
 - Alkaline phosphatase 62 IU/L
- Blood counts:
 - Hct 46%
 - WBC $9.0 \times 10^3/\text{mm}^3$
 - Platelets $220 \times 10^3/\text{mm}^3$
 - HgA1c 11.0%

Vaccinations: Up to date except for Shingrix

SDH: SM completed high school, is able to read and write at an 8th grade level and speaks English as his first language. His income at this stage of his life consists of a social security check that is supplemented with limited seasonal income from his part time work on his farm. The farm doesn't have any debt but requires workers to help SM complete all the harvesting.

He lives on farmstead with his wife. Son and family live just down the road and can help, though very busy with their own children. SM does drive and has access to a car but doesn't like to drive at night anymore due to declining sight. He has a high deductible insurance plan.

Additional context: Most of your pharmacy patients are similar to SM. Because prevalence is so high in the community, you already hold a quarterly class for the community about diabetes management including tips on eating smart, to information on self-monitoring of blood glucose plus information on different medications.

Case Questions

1. What are challenges facing both providers and patients in rural settings?
2. What should be included in a needs assessment for a new rural clinical pharmacy service, such as chronic disease management?
3. How should the pharmacist RK engage SM and the rest of the community in the pharmacy service?
4. What interventions and recommendations would you make to help SM control his disease states (pharmacological and non-pharmacological)?
5. What suggestions do you have for SM to exercise and improve his diet especially during the winter and times of limited transportation?

Author Commentary

It is not uncommon that pharmacists are the only healthcare professional in a small town or rural area. Pharmacists in rural areas face different challenges when attempting to care for their patient population. By expanding services, pharmacists can help provide more comprehensive care for their patients in addition to potentially expanding their business model. In some states, pharmacists can identify patients at need for vaccinations and administer the vaccinations to the patient. Pharmacists can also impact other preventive, screening and monitoring services such as blood pressure checks, glucose and HgA1c point of care testing, testing lipids, DEXA scans, INR, HIV and Hepatitis C screening, and spirometry testing. Pharmacists can even participate

in diagnostic testing such as influenza and Strep A with appropriate waivers. Through collaborative practice agreements (CPAs), pharmacists can prescribe medications for both chronic and certain acute disease states allowing for efficient and effective care for patients, especially in the rural setting. Some pharmacies offer weight management services. Although not applicable for the patient in this case, pharmacists in some states are able to prescribe contraceptives which play an integral role in public health.

CPAs authorizing pharmacists to prescribe vary by state. Some have limited authority while others approve pharmacists to prescribe medications to address a handful of conditions. Under specific conditions that may include protocols, inclusion and exclusion criteria, and need for referrals, pharmacists in some states can write for treatment of many medications, disease states and conditions including but not limited to: cold sores, seasonal influenza treatment and prophylaxis, strep throat (Group A streptococcal pharyngitis), uncomplicated urinary tract infections, statins for patients with diabetes, epinephrine auto-injectors, dietary fluoride supplements, contraceptives, vaccines and opioid antagonists. Many pharmacists work under a CPA for anticoagulation to manage that specific population of patients.

Specifically related to patients with diabetes, as in this case, pharmacists can partner with providers to manage patients' needs (or a multitude of other disease states) through a CPA. Pharmacists can provide both pharmacological and non-pharmacological intervention strategies. Pharmacists can also assist in providing diabetic shoes and performing diabetic foot exams. Pharmacists can also become certified pump trainers (CPT) to help manage patients who have insulin pumps. Additionally, pharmacists can work to help their community residents prevent diabetes and other conditions. For example, pharmacists can participate in the National Diabetes Prevention Program and pursue diabetes certification. If supported by law, pharmacists can be creative in the way they offer services to their patients and expand beyond the duty of dispensing medications.⁸⁻¹²

Patient Approaches and Opportunities

It is important to remember that it takes time to develop trust for managing chronic disease. It involves trust between the provider and pharmacist but also between the pharmacist and patient. Often in rural towns, providers and pharmacists have a close relationship and managing patients together can be seamless. However, in other situations, providers can feel like pharmacists are 'stepping on their toes.' Providers in rural settings are often overworked managing the care of the community and welcome help from pharmacists willing to manage chronic diseases. For patients, many times the pharmacist is their first line "go-to" person for healthcare so it makes sense for the pharmacist to manage chronic disease. In other cases, some patients might feel that it is only the provider's job to do so. In either case, providing education on the training and ability of the pharmacist along with earning trust can go a long way in expanding pharmacy services to improve patient care and outcomes. The pharmacist should demonstrate to patients and providers alike that the service provided is valuable and beneficial to all parties. While many ideas might seem like good ones, and while patient care is at the forefront, ultimately healthcare is a business and services need to be sustainable.

By collaborating with the provider and including the patient in the process, the pharmacist can provide patient centered care in the rural setting. American College of Clinical Pharmacy (ACCP) developed a white paper that addresses developing ambulatory pharmacy services. Personal interests, professional knowledge, and patient/customer needs should be merged. A market assessment should be performed and the ACCP white paper provides resources to assist pharmacists in carrying out steps and weighing factors involved for a market assessment including: what is the current state of the proposed service, what is the current standard of care, what current and future developments may affect the service, identifying factors in customer decision making, customer needs to be addressed, timing of the service. The white paper includes a plethora of other useful information and the authors encourage readers to examine the document.¹³

Important Resources

Related chapters of interest:

- [Telepharmacy: building a connection to close the healthcare gap](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [Only a mirage: searching for healthy options in a food desert](#)
- [Let your pharmacist be your guide: navigating barriers to pharmaceutical access](#)

External resources:

- Websites:

- CDC Advancing Team-Based Care Through Collaborative Practice Agreements: A Resource and Implementation Guide for Adding Pharmacists to the Care Team. <https://www.cdc.gov/dhbsp/pubs/docs/CPA-Team-Based-Care.pdf>.
- Rural Health Promotion and Disease Prevention Toolkit <https://www.ruralhealthinfo.org/toolkits/health-promotion>.
- A program guide for public health partnering with pharmacists in the prevention and control of chronic diseases. https://www.cdc.gov/dhbsp/programs/spha/docs/pharmacist_guide.pdf.
- National Rural Health Association Policy Brief: Pharmacy. <https://www.ruralhealthweb.org/getattachment/Advocate/Policy-Documents/Pharmacy.pdf.aspx?lang=en-US>
- Additional reading:
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11. Centers for Disease Control and Prevention. Rx for the National Diabetes Prevention Program: Action Guide for Community Pharmacists. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2018.
12. Centers for Disease Control and Prevention. Conducting a needs assessment. https://www.cdc.gov/nchs/icd/data/needs_assessment.pdf. Updated November 6, 2015. Accessed February 2, 2019.
13. Best Practice Models White Paper: Developing a Business-Practice Model for Pharmacy Services in Ambulatory Settings <https://www.accp.com/docs/positions/whitePapers/AmbCareBusPractModelACCP.pdf>. Published in 2009. Accessed February 2, 2019.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.17: Telepharmacy- building a connection to close the healthcare gap

Learning Objectives

At the end of this case, students will be able to:

- Discuss the barriers to quality health care in rural settings
- Describe the types of available telepharmacy services
- Define Medication Therapy Management (MTM) and the requirements as developed by managed care organizations
- Explain the advantages and disadvantages of telepharmacy services

Introduction

The United States is a country in transition. According to the US Census Bureau for 2010, about 60 million Americans, 19% of the population, lived in rural areas.¹ Although rural counties demonstrated a 3% growth in population since the 2000s, according to Pew Research Analysis, today, within each county, there has been about a 52% decline in population due to economic shifts.² Rural communities face multiple challenges that result in disparities compared to urban settings. Primarily, access to quality care is limited due to the lack of human and capital resources. Difficulties recruiting and retaining quality health care professionals (particularly for areas competing with urban settings)³ and reduced funding and payer reimbursement for providers create barriers to consistent care. Patients in rural communities are also more likely to be older, less affluent and underinsured,^{4,5} with higher rates of chronic conditions and adverse health outcomes compared to those in urban settings.⁶

Although the current supply of pharmacists in the United States is mostly meeting demand,⁷ many of these pharmacists are not practicing in rural areas. The RUPRI Center for Rural Health Policy Analysis found that between 2003 and 2018, more than 1,200 independently owned pharmacies closed in rural communities.⁸ Of this, 589 rural communities that had one pharmacy in 2003 had zero by March 2018.⁸ With rural areas experiencing a shortage of other health care practitioners as well, the closing of pharmacies in these areas could also mean the loss of the only healthcare practitioner who may have been providing services to the community and filling a critical void. Telepharmacy, or the provision of services by pharmacists to patients or their caregivers using technology,⁹ has become an increasingly popular strategy to fill such these voids while expanding both the role of and career opportunities for pharmacists. Telepharmacy provides a cost-effective means for pharmacists to provide routine and highly specialized clinical services in remote areas where the need may be greatest. In addition to remote order entry, order verification, and medication dispensing, telepharmacy services performed by pharmacists can include drug reviews and monitoring, assessment of patients and clinical outcomes, patient counseling, medication therapy management, sterile and non-sterile compounding verification, drug information, and clinical consultations with other health care practitioners.¹⁰

The Centers for Medicare & Medicaid Services (CMS) encourages innovative healthcare models and recognizes the value of integrating pharmacists to coordinate the Triple AIM Initiatives to improve patients' care experience, improve population health, and reduce per capita healthcare costs. One of the ways Managed Care Organizations (MCOs) employ cost-saving and innovative practices is by providing telepharmacy services to their members.¹¹

CMS adopted the Pharmacy Quality Alliance (PQA) MTM Completion Rate as a performance metric by which program sponsors will be evaluated. This requires sponsors offering Part D plans to establish MTM programs provided by pharmacists or other qualified providers to their members with the goal of optimizing therapeutic outcomes and reducing the risk of adverse events. Pharmacists at MCOs, PBMs, retail pharmacies, or MTM centers can utilize pharmacy and medical claims to identify eligible members to provide telephonic MTM services. The MTM programs target Part D enrollees with multiple chronic diseases, who are taking multiple Part D drugs, and who are likely to incur annual costs for these Part D drugs that exceed predetermined level; however, these services may be expanded to members who do not meet the eligibility criteria. Each sponsor has the ability to set the minimum number of chronic conditions as well as the minimum number of covered Part D drugs the member must have filled to be eligible for the MTM program. At the minimum, sponsors must offer interventions for members and prescribers utilizing an

annual comprehensive medication review (CMR) and quarterly targeted medication reviews (TMRs).¹²

Case

Scenario 1.17.1

You are a pharmacist scheduled for a CMR using the telepharmacy service with a patient on your quarterly report.

CC: “I need my medication reviewed because I received this letter from my insurance.”

Patient: GM is a 75-year-old Caucasian female of Scandinavian descent who lives independently in a rural town in upstate New York. She is wheelchair-bound and uses mail order for all of her prescriptions. She prides herself on her home cooking and enjoys baking “Amish” style pies with lard. GM would like to be more active but since GM became wheelchair bound, she does not believe that she can exercise and spends most of her free time knitting in front of the television or reading magazines that she receives in the mail. She is interested in sitting down with someone to learn more about why she is taking so many medications as well as healthy lifestyle changes but is unable to get transportation to the local pharmacy and does not have internet access.

HPI: GM has LASARA insurance and is eligible for a CMR by a pharmacist because she is currently taking more than eight medications to manage her chronic diseases. GM appears on the LASARA MTM pharmacist’s quarterly report indicating to complete a CMR.

PMH: Osteoporosis; diabetes; HTN; vitamin D deficiency

FH:

- Father: T2DM and hyperlipidemia, died of heart attack at 83 years
- Mother: osteoporosis and hypertension, died of old age at 93 years

SH:

- Smokes cigarettes (one PPD)
- Drinks socially (1 glass of wine)
- Loves Mountain Mist (2 liters/day)
- Little to no physical activity

Medications:

- Miacalcin Instill 1 spray in one nostril once daily
- Calcium Citrate 250 mg and vitamin D 200 units twice daily
- Metformin 500 mg twice daily
- Lisinopril 10 mg daily
- HCTZ 25 mg once daily
- Lantus 25 units at bedtime
- Novolin R sliding scale three times a day before meals
- Senna S one tablet daily
- Miralax daily
- Diazepam 5 mg 1 tablet daily as needed for anxiety
- Ambien 5 mg daily as needed for insomnia
- Norco 5/325 mg every 6 hours as needed for pain

Vaccinations: Up to date

Labs: None available at this time

SDH: Patient resides in government-subsidized senior housing in rural upstate New York. She retired from her job as a Processing Technician at a multinational information technology company. She completed her Associates Degree in Computer Science from SUNY Broome. Her income consists of her pension and social security checks. Her family has relocated and may visit 1-2 times a

year.

Case Questions

1. What healthcare challenges do patients encounter in the rural setting?
2. How might a patient be identified for telepharmacy services in managed care?
3. In addition to a CMR, what additional services could be provided by a telepharmacist to GM?
4. What may be perceived advantages and disadvantages of telepharmacy?

Author Commentary

With an increasing number of rural communities becoming pharmacy deserts, telepharmacy is an innovative pharmacy practice option that has the potential to both introduce and expand routine and clinical pharmacy services, while ensuring care in our rural populations is not lost. Telepharmacy not only benefits the rural patients who will be able to receive the high-quality services, but it also benefits rural hospitals, both small and large, by giving them access to 24-hour pharmacy coverage and helping them to expand its services. With renewed or continued access to pharmacy services, telepharmacy could also minimize or eliminate variables at the health care system level that contribute to health disparities, such as the availability of healthcare practitioners and the geographic location of services.

Patient Approaches and Opportunities

It is important to recognize that telepharmacy is becoming one of the preferred strategies to expand pharmacy services to rural communities. As telepharmacy continues to evolve, we will see additional models developed and improved, while the role of the pharmacist is also further defined. Today, the pharmacist is responsible for supporting the patient and encouraging the use of the technology-based telepharmacy services. Rural patients may have limited access and experience with computers, cell-phones, webcams, and other software used to host clinical services. Thus, patients may be apprehensive to the service and engaging an unknown pharmacist through the use of technology. It is critical to the pharmacist-patient relationship that time is dedicated to discussing any potential discomfort and/or concerns about the telepharmacy service before addressing the goals of the interaction. As pharmacists, insurance companies, PBMs, and other providers decide to expand their services to include a telepharmacy component, an environmental scan and/or needs assessment is critical to the success of the initiative.

Important Resources

Related chapters of interest:

- [Plant now, harvest later: services for rural underserved patients](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [Communicating health information: hidden barriers and practical approaches](#)
- [Only a mirage: searching for healthy options in a food desert](#)
- [Let your pharmacist be your guide: navigating barriers to pharmaceutical access](#)
- [The great undoing: a journey from systemic racism to social determinants of health](#)

External resources:

- Poudel A, Nissen LM. Telepharmacy: a pharmacist's perspective on the clinical benefits and challenges. *Integrated Pharm Res Pract* 2016;5:75-82.
- Peterson CD, Anderson HC. The North Dakota Telepharmacy Project: restoring and retaining pharmacy services in rural communities. *J Pharm Technol* 2004;20:28-39.
- The North Dakota Telepharmacy Project: <https://www.ndsu.edu/telepharmacy/>
- Erickson AK, Yap D. On the line: telepharmacy technology expands hospital pharmacists' reach. *Pharmacy Today* 2016;22(4):4-5.
- Federal Office of Rural Health Policy: <https://www.hrsa.gov/rural-health/index.html>
- Rural Healthy People 2020: <https://srhrc.tamhsc.edu/rhp2020/index.html>
- National Rural Health Association Policy Documents: <https://www.ruralhealthweb.org/advocate/policy-documents>
- 2018 Medicare Part D Medication Therapy Management (MTM) Programs Fact Sheet: <https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovContra/Downloads/CY2018-MTM-Fact-Sheet.pdf>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.18: Hormonal contraception- from emergency coverage to long-term therapy

Learning Objectives

At the end of this case, students will be able to:

- Identify currently available emergency contraception (EC) products and their role in current practice
- Describe key differences, including efficacy and adverse effects, between different EC options currently available in the market
- Assess cost and ethical considerations related to EC
- Identify necessary patient assessments before prescribing or administration of hormonal contraceptives
- Determine an appropriate contraception plan using a patient case considering the patient's age, social habits, underlying disease states, and current medications
- Identify important counseling points to provide to patients for safe and effective use of contraception

Introduction

Since the first emergency contraceptive (EC) pills were approved by the Food and Drug Administration (FDA) in the 1990s, advancements have led to several methods that are currently available to prevent pregnancy after unprotected or inadequately protected sexual intercourse. Despite this, 45% of pregnancies in the United States remain unintended.¹ This is primarily due to barriers to access and lack of awareness among women about their own risk of unintended pregnancy as well as safe and effective use of contraception.²

Levonorgestrel (Plan B[®], My Choice[®], Take Action[™], etc.) is the only EC that is available over the counter to anyone regardless of age or gender and without parental consent. Ulipristal acetate (Ella[®]), copper intrauterine device (Cu-IUD, ParaGard[®]), and combined oral estrogen-progestin regimen (the Yuzpe method) are all EC methods that require a prescription.^{2,3,4} Additionally, the Cu-IUD requires insertion by a trained healthcare professional. Both levonorgestrel and ulipristal have been shown to be less effective in patients who are overweight or obese, a concern considering more than 60% of adult patients in the US are overweight or obese.⁴ All EC options can be used within five days of unprotected intercourse; however, levonorgestrel efficacy may decrease after 72 hours.

Prescription-only EC methods create major barriers to access as it delays care and can be a time consuming and expensive process. Pharmacies across the nation who have elected to prohibit dispensing of ECs or allow their pharmacists to refuse to dispense pose another barrier. From an ethical standpoint, it is important for healthcare professionals to understand the underlying mechanism of action of the EC methods so it is not confused with medical abortion methods. EC is effective in preventing pregnancy only before implantation phase, which means EC would not terminate an existing pregnancy.²

Use of EC products can be especially beneficial in specific circumstances, such as in the case of missed dose(s) or drug-drug interaction where oral contraceptive efficacy is compromised. However, use of EC products as a primary contraceptive method is not recommended.⁵ Consistent use of EC as a primary method of contraception is not as effective as combined oral contraceptives (COC), can cause increased menstrual irregularities, and is often more expensive. Further, despite its availability during the past 20 years, there is limited data to show that EC availability has decreased pregnancy rates.² Twenty-five percent of women who are at risk for unintended pregnancy in the US experience challenges in obtaining a primary contraceptive method (e.g., difficulty obtaining a visit with a physician, inconvenient clinic hours or not desiring a pelvic exam).⁶

As of 2021, fifteen states allow pharmacists to prescribe oral contraceptives, and more states are working on legislation.^{7,8} Pharmacists must be prepared with adequate knowledge of necessary patient-assessment processes; differences between pharmacotherapy products' efficacy, safety, side effects, and drug interactions; and rules and regulations surrounding their prescribing activities. The US Medical Eligibility Criteria (MEC) and Selected Practice Recommendations (SPR) published by the CDC guide appropriate selection of contraception products for patients seeking contraception based on comorbidities, efficacy,

and other factors.^{9,10}

Case (part 1)

Scenario 1.18.1

You are a pharmacist in a community pharmacy in a rural area.

CC: “My boyfriend and I had sex last night and didn’t use a condom. Do you have that pill I can take?”

Patient: RG is a 19-year-old college sophomore that has been coming to your pharmacy for the last year and a half for her sumatriptan and levothyroxine. Today, she presents looking a little pale and uncomfortable. She waits for the line at the pharmacy counter to die down before coming up to speak to you.

HPI: RG has been dating her current boyfriend for two years and they began having consensual monogamous sexual intercourse a few months prior. They have used condoms in the past but ran out and hadn’t stopped at the pharmacy to pick up more. RG reports this was her first time having unprotected sex.

PMH: hypothyroidism (2 years); headaches (1-2/month)

FH:

- Mother: alive (55 years), HTN and hypothyroidism
- Father: alive (58 years), HTN

SH:

- Current sophomore studying electrical engineering at a public university
- Drinks socially 3-4 drinks every other weekend
- Denies use of nicotine, illicit substances, and non-prescribed medications.

SDH: Uninsured. Works part time at the campus bookstore. Lives in campus housing. Does not have a car on campus. Current PCP is located 6 hours away.

Medications:

- Sumatriptan 100 mg by mouth at onset of headache (may repeat if headache persists after 2 hours)
- Levothyroxine 88 mcg by mouth daily

Allergies: NKDA

Labs:

- BP 124/82 mmHg
- HR 68 bpm

Case Questions

1. One of the largest barriers to contraceptive care is the ability to access medications. How might RG struggle to access contraception? How might current laws and ethical principles factor into access to care?
2. RG does not have insurance and cannot afford the cost of Plan B? What options are available to help minimize costs?
3. RG mentions she has heard some emergency contraception can cause an abortion. How would you respond to this?
4. Based on access, cost and patient concerns, what would be an appropriate recommendation for RG?

Case (part 2)

RG returns to the community pharmacy to initiate a hormonal contraceptive after seeking her third course of EC in three months. She just finished her menstrual cycle and has not had unprotected sex since she last saw you for her EC. RG has one sexual partner and is in a committed relationship. She has never taken an oral contraceptive due to cost as she is uninsured and due to fears that it would make her gain weight.

Many of her friends who started OCs when she was a teenager told her they made them gain 15-20 lbs. She reports using EC is becoming expensive and her boyfriend doesn't like using condoms. RG wants to know if there is an affordable oral contraceptive she can start – she heard that pharmacists can now prescribe contraceptives.

RG has never taken any daily medications and is worried that she may struggle to remember taking a pill but doesn't think she would like the ring product. She reports that her menstrual cycle is fairly heavy and some of her friends told her their oral contraceptive shortens their period to every few months. RG would like to use one of these products to help alleviate symptoms of her menstrual cycle but wonders if there are any health risks associated with that.

Case Questions

5. What family history and/or past medical history would be significant to collect in your assessment for RG? Why?
6. What factors should be considered when assisting RG in choosing an appropriate contraceptive method?
7. If RG had a PMH of VTE instead of migraines, how would her contraception selection and health risks from contraceptives change?
8. How could RG's cultural or religious beliefs impact her contraception preference, use, and adherence?

Author Commentary

The development of safe, effective contraception is widely considered to be one of the greatest public health achievements of the 20th century.¹¹ There are an increasing number of safe and effective choices for contraceptive methods to reduce the risk for an unintended pregnancy, however with this comes an increasing need for healthcare providers' knowledge of evidence-based guidance to offer quality family planning care. This includes choosing the most appropriate contraceptive method, counseling on appropriate and consistent use of the contraceptive, and identification and resolution of adverse effect and adherence challenges. In addition to tolerability, accessibility and affordability of contraception should be ensured. Contraception recommendations by family medicine physicians were found to be inconsistent with CDC guidelines 23% of the time for oral contraceptives and 40% of the time for intrauterine devices (IUDs). The Direct Access study was the first study to evaluate the use of a collaborative drug therapy protocol by pharmacists for contraception prescribing.¹² It demonstrated that community pharmacists have the knowledge and skill to adequately screen female patients seeking contraception and select the most appropriate product to meet individualized patient needs.^{12,13}

EC is an effective option for those who do not desire pregnancy if taken up to 120 hours from unprotected or inadequately protected sexual intercourse. The CDC US MEC for contraceptive use (2010) includes no medical conditions in which the risks of EC outweigh the benefits.^{9,10} Thus, all women should be offered or made available EC when requested and should not be delayed waiting for pregnancy testing. Pharmacists can dispense and counsel patients on appropriate use of these products as well as improve access through knowledge of the laws and ethical considerations pertaining to these products. Pharmacists should make an effort to minimize barriers to dispensing of ECs and refer the patient to a colleague if morally conflicted.

Patient Approaches and Opportunities

Pharmacists working in community and ambulatory care settings can and should screen all female patients for contraception use and access. Pharmacists should be aware of US MEC and SPR guidance published by the CDC that are available online and available as mobile applications for quick access. Using these and other resources available including online access to contraception, females should be provided with an appropriate contraceptive method that is safe, effective, and affordable. They should also be well educated on what to do in the setting of missed doses, adverse effects (e.g., breakthrough bleeding), and drug-drug interactions. Pharmacists have the knowledge and opportunity to provide education and counseling on EC and non-contraceptive risks and benefits. Online and application-based services are also available to access contraceptives (e.g. PillClub, NuRx).

In addition to decreasing the risk of unintended pregnancy, many contraceptive methods reduce the risk of endometrial and ovarian cancers, are therapeutic agents for menstrual-related disorders and have other benefits.^{14,15} Women should be empowered with the necessary education and counseling to make a shared decision in which method, if any, to use to prevent pregnancy and/or to ameliorate or treat symptoms related to their menses.

Important Resources

Related chapters of interest:

- [From belly to baby: preparing for a healthy pregnancy](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [An ounce of prevention: pharmacy applications of the USPSTF guidelines](#)
- [Sex education: counseling patients from various cultural backgrounds](#)
- [Digging deeper: improving health communication with patients](#)
- [PrEPare yourself: let's talk about sex](#)

External resources:

- Practice Bulletin No. 152. Emergency Contraception from Obstetrics and Gynecology. <https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2015/09/emergency-contraception>
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- United States (US) Medical Eligibility Criteria (MEC) for Contraception Use, 2016. <https://www.cdc.gov/reproductivehealth/contraception/mmwr/mec/summary.html>
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.19: From belly to baby- preparing for a healthy pregnancy

Learning Objectives

At the end of this case, students will be able to:

- Identify social determinants of health affecting infant and maternal morbidity and mortality
- List key preventative measures in pregnancy as recommended by the United States Preventative Services Task Force (USPSTF)
- Assess a patient in need of prenatal vitamin, iron, and aspirin for prevention of prenatal complications

Introduction

Quality maternity care including pre-conception, pregnancy, and interconception care (care from one pregnancy to the next) has been shown to reduce rates of maternal and infant mortality and morbidity.¹ While rates of morbidity and mortality are lower in the United States than many other countries, there are numerous disparities that exist.

Sociodemographic and behavioral factors play into the maternal and fetal outcomes. Age, race, education, family income, nutritional status, and preconception health may affect mom and baby. Preterm births, low birthweight infants, and infant death are highest in teens under 18 years of age and women over 40. Women greater than 35 years old are also at risk for higher rates of maternal death or serious maternal outcomes. Interpregnancy intervals also affect the health of the baby with increased morbidity including neonatal intensive care or enhanced ventilation requirements in babies born within an interpregnancy interval less than 12 months or over 24 months. Mothers tended towards increasing risks of gestational hypertension or gestational diabetes when the interpregnancy interval increased beyond 24 months.² In addition, when compared with infants born to non-Hispanic white mothers, infants born to non-Hispanic black mothers and Native American mothers are more than twice as likely to die in the first year of life and to be at risk for preterm birth or other complications.³ While a small number of racial or ethnic disparities may be due to genetic factors, the majority are due to inequalities in income, housing, and education level.⁴ Women of lower socioeconomic status are more likely to have increased stress, poorer nutrition, and increased use of tobacco or other substances. This contributes to increases in preterm birth and small-for-gestational-age babies.⁵⁻⁶ Women with lower levels of education have been associated with higher maternal mortality despite similar access to care.⁷ Finally, health-care system disparities in access or affordability and provider-level factors including culturally derived mistrust of the healthcare system may also contribute to differences in prenatal and perinatal outcomes.⁴ Improved maternal and infant health will likely require continued research and multidisciplinary approaches to understand these and other contributing factors.

Good nutritional status is essential in pregnancy. A prenatal vitamin in addition to a well-rounded diet is recommended prior to and during pregnancy to prevent adverse outcomes. Higher levels of folic acid and iron are needed in pregnancy.⁸ Folic acid should be started prior to conception at doses of 400-800 micrograms daily to prevent neural tube defects that can happen in the first few weeks of pregnancy.⁸⁻⁹ Iron requirements increase from 15-18 milligrams to 27 milligrams during pregnancy as the body makes more red blood cells to provide oxygen to the fetus.¹⁰ While the daily intake requirements do not change during pregnancy, calcium and vitamin D are essential for the development of the fetus' bones and teeth.

Addressing prior health conditions is also a component of maternal care. Typically, hypertension and diabetes diagnosed prior to 20 weeks gestation are categorized as chronic health conditions while those diagnosed past 20 weeks gestation are categorized as gestational conditions. Both chronic conditions and gestational conditions have been shown to increase the risk of miscarriages, small for gestational age, macrosomia, preterm birth, and neonatal intensive care stays.¹¹⁻¹² In addition, there are increased rates of maternal death and long-term complications.¹¹⁻¹³

Pharmacists should review a patient's medications including prescriptions, over-the-counter and herbal medications, and vitamins at every visit to determine safety during pregnancy. This is incredibly important as nine out of 10 U.S. women take a medication at some point in their pregnancy.¹⁴ It is necessary to know how far along a patient is in the pregnancy to identify if a medication can be used as some adverse effects may only be seen in specific trimesters. Since 2015, medications have moved

from the previous categorization system of A, B, C, D, and X to the more extensive risk summary and clinical considerations. This now involves three sections for pregnancy, lactation, and females and males of reproductive potential.¹⁵ Pharmacists can utilize a variety of drug resources, case reports, and studies to best recommend medications to use or not to use in pregnancy.

Case

Scenario 1.19.1

You are a pharmacist in a family medicine clinic.

CC: “I missed my period. I think I may be pregnant.”

Patient: TW is a 37-year-old African American female (68 in, 92 kg) coming in for evaluation of a new pregnancy.

HPI: TW is G2P2 with two healthy baby boys ages three and five. She reports her last period was 2.5 months ago. She has had some nausea throughout the day with vomiting two to three times daily for the last five weeks. In addition, she reports occasional dizziness. TW and her husband have not been using any contraception since her last pregnancy.

PMH: depression (four years); iron-deficiency anemia in last pregnancy

FH:

- Mother: alive (60 years) with HTN, T2DM, no prenatal complications (G4P4)
- Father: alive (58 years) with HTN

SH: Denies use of alcohol, nicotine, illicit substances, and non-prescribed medications

SDH: Medicaid insurance. Refugee status; moved to the US from Ethiopia 12 years ago

Medications:

- Sertraline 100 mg once daily
- One A Day® Vitacraves® Women’s Gummy Multivitamin 2 gummies daily
- Ferrous sulfate 325 mg 1 tablet once daily (last took 2.5 years ago)

Allergies: NKDA

Vitals:

- BP 110/62 mmHg
- HR 72 bpm
- RR 16 rpm
- Temperature 98.6 °F

Labs: Pregnancy test (positive)

Imaging: Ultrasound confirms singleton pregnancy at 11 weeks gestation

Case Questions

1. What socioeconomic factors may increase TW’s risk for maternal and infant morbidity and mortality?
2. TW is currently on a few medications. Where can pharmacists and healthcare providers look to determine safety of a medication in pregnancy? Can TW continue her current medications in pregnancy?
3. List the current published USPSTF recommendations for pregnant women. Which might be appropriate for the pharmacist to address?
4. Looking at TW’s chart, assess her need for supplementation of folic acid and iron

5. Using the USPSTF clinical risk assessment for preeclampsia, decide if TW should be recommended aspirin during this pregnancy.

Author Commentary

Pregnancy comes with many stressors, with medications being just one. Pharmacists can provide support and answers to questions regarding what products may or may not be safe for mom and baby during pregnancy, and later in lactation and nursing. Recognizing the benefits and risks of medications and being able to explain it to both physicians and patients can optimize care and allow for patient-centered care. While it is important to avoid certain medications, some medications especially folic acid should be recommended to all pregnant women and those of childbearing potential to minimize risks for neural tube defects. It is just as important to know what medications to recommend as it is to know what medications to avoid. Pharmacists in all practice settings should stay up-to-date on changes to prenatal guidelines and recommendations, including those for preventative care.

Pharmacists may engage the pregnant patient in regular care, providing education during pregnancy for acute or chronic issues. As a pharmacist, one may be asked to co-manage gestational concerns such as gestational hypertension, gestational diabetes, or gestational anemias with the provider. Patients may come to the pharmacy for regular blood pressure checks or to review use of diabetic supplies and blood glucoses during pregnancy. Recognizing times to for education and self-care and referral for serious symptoms is needed to ensure timely care. Working with the patient and provider to select the right contraception, whether hormonal or family planning methods, during the interpregnancy period can allow for optimal spacing if more children are planned to minimize complications from shortened or lengthened interpregnancy intervals. Finally, providing care in a culturally competent, health literate way can help patients feel comfortable and confident in the pharmacist's knowledge and advice. Being aware of community resources can help patients to gain access to the care and provisions needed in pregnancy, hopefully minimizing disparities for a healthy pregnancy.

Ensuring the mom and baby are protected with the right medications, the right vaccinations, and the right education, pharmacists can prepare the patient for a healthy pregnancy and beyond.

Patient Approaches and Opportunities

Pregnancy is an important health condition affecting many women at some point in their lives. Pharmacists must be able to appropriately address prenatal concerns and know when patients should be referred to other healthcare providers. Providing patients and healthcare providers with up to date information addressing the risks and benefits of medications prior to pregnancy for women of childbearing age, during pregnancy, breastfeeding and postpartum, is a vital area for pharmacists to minimize teratogenic risks and concerns for mother and baby. It is important to assess social determinants of health and recognize their importance in healthcare decision-making. Pharmacists can make key interventions to minimize adverse outcomes by being knowledgeable in medication and nutrition recommendations for pregnant patients.

Pharmacists play a public health role in so many ways. Pharmacists recommend and may administer vaccinations. During pregnancy, non-live vaccines can be recommended. All pregnant women without complications should receive an inactivated influenza during influenza season and a tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) between weeks 27 and 36. The Tdap vaccine improves protection and cocooning of young infants from pertussis. Additionally, pharmacists can provide recommendations for postpartum contraception depending on the needs of the patient. As durable medical equipment providers pharmacists may also counsel patients on breastfeeding and lactation support and supply breast pumps and supplies.

Despite being a time in which many patients are on few to no medications, pharmacists can truly provide outstanding care and support, contributing to the needs of the patients and healthcare team.

Important Resources

Related chapters of interest:

- [Deciphering immunization codes: making evidence-based recommendations](#)
- [Getting to the point: importance of immunizations for public health](#)
- [An ounce of prevention: pharmacy applications of the USPSTF guidelines](#)
- [Hormonal contraception: from emergency coverage to long-term therapy](#)
- [Sex education: counseling patients from various cultural backgrounds](#)

- [When love hurts: caring for patients experiencing interpersonal violence](#)

External resources:

- Healthypeople.gov. <https://www.healthypeople.gov/>
- National Institutes of Health Office of Dietary Supplements. <https://ods.od.nih.gov/>
- American College of Obstetricians and Gynecologists (ACOG). <https://www.acog.org/>
- Centers for Disease Control and Prevention- Treating for Two. <https://www.cdc.gov/pregnancy/meds/treatingfortwo/index.html>
- Mother to Baby. <https://mothertobaby.org/>
- United States Preventative Services Task Force (USPSTF). <https://www.uspreventiveservicestaskforce.org/>

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Glossary and Abbreviations

- [Glossary](#)
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1.20: When disaster strikes- managing chaos and instilling lessons for future events

Learning Objectives

At the end of this case, students will be able to:

- Describe methods to accelerate the resumption of normal operations following the occurrence of a natural disaster or emergency.
- Identify the potential hazards and major impacts of extreme weather events.
- Describe critical resources needed by pharmacists and considerations related to these resources to ensure access to medications and services during and following natural disasters.
- Formulate an emergency preparedness or action plan.

Introduction

Natural disasters such as hurricanes, tornadoes and flooding are usually unpredictable. These events typically occur suddenly and with little or no warning and can cause widespread chaos. In recent years, a variety of types of natural disasters have occurred in the United States and around the world. Natural disasters have both short-term and long-term consequences and may result in severe infrastructural damage, personal injury, and public health threats. This can lead to an increased need for pre-emergency planning and post-disaster patient care. Pharmacists are recognized – with increasing responsibility – as important members of disaster preparedness planning and response teams.¹⁻³

Following natural disasters, healthcare providers play a key role in recovery by providing patient care and helping to ensure access. However, during these times, pharmacists and other health providers also may be called upon for more nontraditional roles. In 2003, the American Society of Health-System Pharmacists (ASHP) released a statement outlining roles for pharmacists in emergency preparedness and provided advice tailored to specific groups (e.g., pharmacy directors, pharmacists, administrators).⁴ The statement included commitments made by ASHP to assist in communication and dissemination of information related to emergency preparedness through their member network.

Potential roles identified for pharmacists in emergency preparedness and disaster management in other literature include medication provision and prevention of communicable diseases.⁵ For example, pharmacists may be asked to provide medications and/or disease state education for rare infections or complications from exposure to contaminated flood water. Additionally, other literature identified that mass immunization campaigns might need to be initiated and patient needs can quickly overwhelm facilities that are working with limited resources. Pharmacists trained in the provision of immunizations may help to address these challenges.¹⁻⁶ Finally, management of chronic disease states also was cited as becoming more challenging, with interrupted supplies of common medications and potentially dangerous or difficult living situations that can exacerbate chronic diseases such as diabetes or hypertension.⁷ Pharmacist awareness of alternative supply chains may help to alleviate these challenges and ensure continuity of management of chronic diseases.

While the roles of pharmacists are expanded during a disaster, it is important to remain aware of and act within the laws, rules, and regulations. Following a severely damaging natural disaster, a state of emergency may be declared, which can lead to changes in rules and regulations that impact pharmacists and pharmacy operations. Specific changes vary among states, so it is important that pharmacists investigate their practice location.^{8,9} Since natural disasters usually occur with little or no warning, development of comprehensive disaster preparedness plans tailored to individual pharmacies is important.¹⁰ Pharmacists at all levels can and should be involved in developing and updating these plans on a regular basis.¹ Many resources are available for pharmacies and pharmacists to develop and refine an emergency response and disaster preparedness plan to allow for a more efficient and timely response when needed.

Case

Scenario 1.20.1

You are a pharmacist in a temporary medical clinic as a result of a hurricane five days ago.

CC: “I lost all of my medications when I had to evacuate.”

HPI: DS is a 42-year-old male (71 in, 90.9 kg). His house was flooded in the storm and badly damaged. He is currently staying at a nearby emergency shelter until arrangements for longer term housing can be made with his insurer. He has a minor cut on his leg from an injury sustained while helping a neighbor with cleanup of his flooded home. He states that the cut hurts. Upon examination, you notice the wound is warm to the touch and is red and swollen. He also has experienced some shortness of breath and difficulty breathing during cleanup.

PMH: T2DM (controlled by diet); hypertension; asthma

FH:

- Father: heart attack at age 70
- Mother: history of DM

SH: Limited information about the patient's social history has been provided. However, the patient states that he currently has limited access to shelter and basic medical resources as a result of his displacement following the hurricane.

Surgical history: Non-remarkable

Vitals:

- BP 149/85 mmHg
- HR 88 bpm
- RR 21/min
- Temperature 99.1 °F
- Pulse oximetry 92% on RA

Labs: Unable to access. The pharmacy and the local health system computers were impacted and are not accessible. Patient is also unable to recall specific values and states he had a paper with some of his valuables, but this was lost in the storm.

Medications:

- Albuterol – Inhale 2 puffs every 6 hours as needed for SOB/wheezing for asthma
- Lisinopril/HCTZ 20/12.5 mg – Take 1 tablet by mouth daily for hypertension
- Advair HFA 115-21 mcg – Inhale 2 puffs 2 times daily for asthma
- Ibuprofen 200 mg – Take 1 tablet by mouth every 4 hours as needed for pain from leg injury/muscle soreness from clean up following natural disaster

Allergies: NKDA

Vaccinations: Patient is unable to recall

SDH: Patient states that he has medical and prescription insurance but cannot locate or provide his insurance card or identification. He is unable to recall a specific company that provides his health insurance but can tell you that he uses a local smaller chain pharmacy typically for accessing pharmacy services.

Additional context: A temporary clinic has been set up by employees of a local ambulatory care clinic to attempt to care for patients affected by the storm. The clinic location where the employees typically are employed was badly damaged in the storm and is not able to be used for normal operations for quite some time. The attached clinic pharmacy was also affected and is currently inaccessible; however, some supplies have been salvaged for urgent use. The clinic's medical and pharmacy records are currently inaccessible. Pharmacies located out of state but nearby have offered assistance with obtaining medication stock but

need clarification of what supplies are most needed and a plan for transport of the supplies to the affected areas.

Case Questions

1. What documentation needs to be done prior to dispensing medications to patients or providing medications to other healthcare providers involved in disaster management care? How and when should this documentation be completed to provide the patient with medications?
2. How can you determine or verify if a patient has a legitimate prescription when records are not accessible?
3. What pharmacy preparations could be undertaken in advance to ensure your ability to safely and appropriately respond in an extreme weather event?
4. What acute health risks does this patient have?
5. How can you help educate and prepare the community and the patient for response and recovery?

Author Commentary

Although this case focuses on a specific situation of severe flooding, many of the issues and concepts discussed can be applied in emergency situations arising from other natural disasters. As discussed above, the period following a severe natural disaster may be chaotic and contribute to worsening of a patient's chronic disease states as well as introducing new disease concerns. Pharmacists can offer practical and creative solutions for health-related problems, especially in situations where the usual healthcare resources are limited or unavailable.

Many educational resources are available for pharmacists with an interest in disaster preparedness and management and are included in the references listed below. Participation in education and preparedness activities is key to effectiveness if faced with the challenge of providing care following a natural disaster. It is strongly encouraged that pharmacists seek out their local emergency management organizations to ensure that pharmacy interests are represented when plans are developed. Pharmacists also are reminded to contact state pharmacy boards for specific guidance and considerations pertaining to each state.

Patient Approaches and Opportunities

When counseling patients, it is important to consider the effect of changes in living conditions (emergency shelter, traveling to stay with friends/family, etc.) on the management of chronic disease states. Aside from the added stress of the disaster situation, patients may be unable to adhere to complicated medication schedules; may be unable to eat regularly scheduled, nutritious or well-balanced meals; may have more limited mobility or other functional losses due to loss of medical equipment such as walkers and important personal items like eye glasses, hearing aids, or false teeth; or decreased accessible shower/restrooms. Plans for patients may have to include managing the acute needs (e.g., 72 hours following natural disaster) and guidance on longer planning/response.

Connecting patients with mental health resources following a natural disaster may be important. Education provided to the public and providers can assist with recognition and awareness of mental health needs in times of crisis/recovery. Depending on the type of disaster, patients may experience anxiety and/or depression and feel overwhelmed as they begin the recovery process. Responders and volunteers can also be affected, especially in the acute phase of recovery when the need is greatest and volunteers may be working long hours in high stress situations and austere conditions. It is critical to watch for signs and symptoms related to depression, stress, and post-traumatic stress disorder. Depending on the culture and understanding of mental health, patients may not directly recognize what they are experiencing as stress, depression, or trauma.

Natural disasters happen all over the world. Preparedness is critical wherever you might be.

Important Resources

Related chapters of interest:

- [More than just diet and exercise: social determinants of health and well-being](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Anticipating anthrax and other bioterrorism threats](#)
- [Immunizing during a pandemic: considerations for COVID-19 vaccinations](#)
- [Laying the foundation for public health priorities: Healthy People 2030](#)

External resources:

- <https://www.ready.gov/> or <https://www.listo.gov/es> (Spanish language version)
 - These websites are part of a national public service campaign to provide education and resources for all Americans to “prepare for, respond to, and mitigate emergencies, including natural and man-made disasters.”
 - Guidance and objectives for a business or workplace preparedness plan are available at <https://www.ready.gov/business>
- <https://www.ccohs.ca/oshanswers/hsprograms/planning.html>
 - Canadian Center for Occupational Health and Safety (CCOHS) provides easy-to-read fact sheets on a variety of topics, including emergency planning
- <https://www.phe.gov/Preparedness/responders/pages/default.aspx>
 - US Department of Health and Hospitals (DHH) Public Health Emergency Page for Responders, Clinicians and Practitioners
 - Includes wide variety of relevant information including links to disaster response organizations, responder mental health and safety, and responder preparedness and planning for specific types of disasters (e.g., bioterrorism, Ebola, etc.)
- <https://www.cdc.gov/phpr/index.htm>
 - CDC Office of Public Health Preparedness and Response is a comprehensive site with a broad range of information on emergency preparedness, potential bioterrorism agents and toxins, the Strategic National Stockpile program, and educational resources for both the public and healthcare providers
- <https://www.healthcareready.org/rxopen>
 - Searchable map resource that provides details of open pharmacies in areas affected by disaster
- <https://training.fema.gov/is>
 - FEMA provides many independent study courses online (free of charge) to learn more about disaster preparedness and response
- Facebook check in: <https://www.facebook.com/about/crisisresponse/>
 - In a time of a natural disaster, communication may be limited and batteries to cell phones or other devices may not be fully charged. Establishing a plan of how to check in or using resources that remove the need to contact a larger number of individuals can help establish peace of mind for loved ones.
- The World Health Organization and the Pan American Health Organization: <https://www.paho.org/en>
 - These organizations provide a variety of natural disaster surveillance and resources

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Glossary and Abbreviations

- [Glossary](#)
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1.21: Anticipating anthrax and other bioterrorism threats

Learning Objectives

At the end of this case, students will be able to:

- Identify the clinical criteria for an inhalation anthrax diagnosis
- Recommend an appropriate medication for post-exposure prophylaxis of anthrax
- Describe the role of a pharmacist during a bioterrorist attack

Introduction

Since the terrorist attacks of September 11, 2001, the US has been on high alert.¹⁻³ The anthrax exposures that followed shortly thereafter amplified the public cognizance that biological weapons remain a potential threat associated with terrorism.^{1,3} Bioterrorism, the use of biological agents as a method of terrorism, may include agents such as anthrax, plague, smallpox, viral hemorrhagic fevers, or non-replicating agents such as toxins produced by living organisms.¹ A likely scenario for a biologic attack is via the dispersal of a pathogen in a densely populated area.¹ For this reason, it is imperative that health systems develop a disaster management team that they can quickly deploy in the event of a mass casualty event.

The role of the pharmacist in disaster management was first described in the 1960s.² Pharmacists were acknowledged as medication experts, capable of assisting in the emergent treatment of patients, educating the public, and developing and coordinating emergency preparedness measures.² In 1966, APhA advocated for the development of a national stockpile of medications and for disaster management plans to include plans for the preparation and mobilization of pharmacy activities throughout all phases of public health emergencies.² It was not until after the 2001 attacks that APhA released formal guidelines to address pharmacist involvement in bioterrorism preparedness planning.

These guidelines called for pharmacies to develop their own disaster management plans and to identify team members who should deploy in the event of a public health emergency. Furthermore, they emphasized the need for pharmacists to stay up to date on these procedures.² The following year, ASHP's statement describing health system pharmacists' role in counterterrorism measures emphasized that pharmacists are capable of not only medication dispensation but making therapy recommendations as well.⁴ The guidelines stated that as medication experts, pharmacists can help optimize therapy as well as limit the overuse of antibiotics in a setting when the demand often exceeds the available supply.⁴ During the 2001 anthrax exposures, the prescribing rate for ciprofloxacin and doxycycline far exceeded recommendations of the CDC.⁵ In a bioterrorism event, delayed treatment, selection of incorrect antibiotics, and the overuse of antibiotics can increase resistance.³ This further highlights the importance of incorporating pharmacists as members of disaster response teams.

The role of the pharmacist in disaster preparedness has further evolved since these early recommendations.^{2,5} Pharmacists have also been incorporated into teams intended to protect their fellow healthcare workers at the front lines of mass casualty events. For example, at Maimonides Medical Center, pharmacists are members of both the hospital's incident command center and the pharmacy emergency response team (PERT). The PERT was developed with the goal of protecting the health of hospital staff and preventing the contamination of the healthcare facility.² Similarly, pharmacists at Montefiore Medical Center participated in a point-of-distribution exercise in conjunction with the New York City Department of Health and Mental Hygiene to simulate the mass prophylaxis of healthcare workers in the event of a public health emergency.⁵ This exercise demonstrated that allowing pharmacists to immunize in a simulated public health emergency afforded approximately 12,000 healthcare workers the opportunity to receive prophylaxis within a 48 hour period.⁵ Pharmacists have the potential to reduce the financial impact of bioterrorist attacks on both the healthcare facility and the surrounding community.⁵

Case

Scenario 1.21.1

You are a pharmacist in an urban emergency department (ED).

CC: “I feel like I can’t breathe.”

HPI: PD is a 32-year-old white male (82 kg) who presents to the ED (along with his wife) in severe respiratory distress. For the past 24 to 48 hours, PD’s wife states he had a fever of 102.5⁰F, non-productive cough, shortness of breath, chest pain, and fatigue. His wife denies other respiratory symptoms. He has no other neurological symptoms. He first started to experience respiratory symptoms about two days after attending a professional hockey game.

PMI: Seasonal allergies (spring)

SH: PD works full time at a mail distribution center, is married with one child (five years old), and lives in an urban city with medical insurance and full access to healthcare services. He reports drinking one to two alcoholic drinks per week (beer/wine with dinner) and two cups of coffee per day, but denies any tobacco and illicit drug use.

Allergies: NKDA

Medications:

- Loratadine 10 mg by mouth daily PRN seasonal allergies

Vaccinations:

- Wife believes he received all routine childhood vaccines, Tdap booster 2 years ago, and is up to date on his annual flu vaccine (receives flu vaccine every year)

ROS:

- General: Well-nourished male in apparent respiratory distress
- HEENT: WNL
- Chest: Rhonchi present
- CV: No murmurs, gallops or rubs
- Abdomen: NT/ND
- Skin: WNL

VS:

- BP 112/60 mmHg
- RR 22 / min
- HR 110 bpm
- Temperature 102.5 ⁰F

Labs and Imaging:

- Chest x-ray: pleural effusion
- Chest CT: mediastinal widening, pleural effusions with pericardial effusion
- Lumbar puncture: negative
- Gram stain (sputum): gram-positive rods, square-ended, in pairs
- Sputum specimen sent to a Laboratory Response Network (LRN)

Additional context: Over the next several days, there are increasing numbers of patients complaining of similar symptoms seen at other hospitals throughout the area. The ED has reported ten other admissions with similar symptoms. PD sputum sample came back as culture confirmed detection of *B. anthracis* by LRN-validated polymerase chain reaction. The state department of

public health has identified several other cases in two other hospitals in the state. The Incident Command Center is activated and the state requests Strategic National Stockpile (SNS) activation for mass prophylaxis.

Case Questions

1. During public health outbreaks, epidemiologists must have a working case definition to identify probable and confirmed cases. What clinical signs and laboratory criteria confirm a diagnosis of inhalation anthrax?
2. Which antibiotics are approved for post-exposure prophylaxis for those exposed to *B. anthracis*?
3. What type of inventory can the SNS supply? How long will take from the initial notification to when points of distribution (PODs) will receive SNS assets?
4. What methods are used to educate the public? Who can dispense these medications?
5. Who can dispense post-exposure prophylaxis antibiotics?
6. What are the considerations for pediatric dispensing?

Author Commentary

Pharmacists remain the most accessible healthcare member in the community. As medication experts, pharmacists are well-positioned to respond to bioterrorism threats. This role has evolved through the decades from public education and medication dispensing to formal training of pharmacists as volunteers, such as members of the Medical Reserve Corps. Following the September 11, 2001, terrorist attacks, thousands of ciprofloxacin and other antimicrobials were prescribed to postal workers, public health officials, and congressional staff members for potential anthrax exposure.⁶ Furthermore, the public was needlessly ordering ciprofloxacin from the internet and stockpiling it for future use without fully understanding the rare but serious adverse effects from unnecessary antibiotic exposure. This prompted the FDA to issue warnings to online vendors to prevent illicit drug sales.⁷

This scenario applies to bioterrorism threats beyond anthrax. Pharmacists can assist public health organizations and responders by administering vaccines, dispensing emergency medications on a mass scale and in a timely manner, providing emergency refills of chronic medications, counseling patients on appropriate antibiotic use and adverse effects, establishing community pharmacies as a point of dispensing (POD), and ensuring adequate medication supplies are available for the response.

Patient Approaches and Opportunities

The International Federation of Red Cross and Red Crescent Societies define disaster as “a sudden, calamitous event that seriously disrupts the functioning of a community or society, causing human, material, and economic or environmental losses that exceed the community’s or society’s ability to cope using its own resources.”⁸ Community resilience is the ability of a community to effectively utilize its own resources to respond to and recover from such a disaster.⁹ Pharmacists are essential in community resilience, and the degree to which pharmacists are prepared for a bioterror or pandemic event may have a significant impact on a community’s ability to respond and recover.

Patients may develop strong, trusting relationships with their pharmacists over a lifetime and may be more willing to share concerns and seek information from, or believe information provided by their pharmacists than from news outlets and public health agencies. In this way, pharmacists may mitigate community panic that can lead to drug hoarding, inappropriate medication use and abuse, and dissemination of inappropriate or inaccurate information. Pharmacists are also essential public health partners in infectious disease surveillance. Because social, economic, and cultural factors influence patients’ health-seeking behaviors, in communities where patients are less likely to seek care from a primary care provider, pharmacists may be the first health care practitioners to recognize the emergence of pandemic disease.

Overarching strategies for managing a bioterrorist attack can be applied to the management of pandemic influenza or other emerging, highly contagious, high mortality infectious disease. During a declared disaster or public health emergency such as a bioterror attack or pandemic event, a temporary, legal change may be made to a state’s pharmacy practice act. A state, county, or community-wide standing-order or collaborative practice agreement may be prepared expanding the pharmacist’s scope of practice. This can include diagnosis, assessment, and prescribing of medications specific to the bioterror or pandemic event. Such methods may allow pharmacists to immunize pediatric patients when the health-care system is strained.

Community pharmacies can develop formal, working-relationships with public health agencies before disaster strikes and may

develop a memorandum of understanding (MOU), a formal, written agreement that defines the roles of all parties in advance. The Association of State and Territorial Health Officials (ASTHO) has partnered with the National Association of Chain Drug Stores (NACDS), the National Alliance of State Pharmacy Associations (NASPA), the CDC, and APhA to develop a toolkit. This toolkit will help public health agencies and community pharmacies develop a MOU that could “leverage all potential partners’ strengths and promote synergies that can be useful for additional services, beyond immunizations.”¹⁰ An MOU will allow pharmacies to coordinate and collaborate with public health agencies by becoming the POD for their neighborhood. In turn, community pharmacies benefit by receiving early allocation of federal vaccines and antibiotic supplies as needed.

Community pharmacies need to have a plan in place should disaster strike. To support public health, during a bioterror or pandemic event, community pharmacies should consider extending working hours and employing temporary pharmacies in quarantine or refugee areas.

Important Resources

Related chapters of interest:

- [When disaster strikes: managing chaos and instilling lessons for future events](#)
- [HIV and hepatitis C co-infection: a double-edged sword](#)
- [Medication safety: to ‘error’ is human](#)
- [Immunizing during a pandemic: considerations for COVID-19 vaccinations](#)
- [Laying the foundation for public health priorities: Healthy People 2030](#)
- [A toxic situation: the roles of pharmacists and poison control centers](#)

Websites:

- Clinical Framework and Medical Countermeasure Use during an Anthrax Mass-Casualty Incident. Available at: <https://www.cdc.gov/mmwr/pdf/rr/rr6404.pdf>
- Anthrax (*Bacillus anthracis*) 2018 Case Definition. Available at: <https://www.cdc.gov/nndss/conditions/anthrax/case-definition/2018/>
- Post-exposure Prophylaxis of Anthrax – Emergency Use Instructions for Healthcare Providers. Available at: <https://www.cdc.gov/anthrax/medical-care/emergency-use-doxycycline-ciprofloxacin.html>
- US Department of Health and Human Services – Assistant Secretary for Preparedness and Response. Public Health Emergency. Strategic National Stockpile Training and Exercises. Available at: <https://www.phe.gov/about/sns/Pages/training.aspx>

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to influenza pandemics and other vaccine-related emergencies. (Aug 2018). Retrieved from <http://www.astho.org/Programs/Infectious-Disease/Pandemic-Influenza/MOU-Toolkit-for-Public-Health-and-Pharmacies/>

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.22: In the stroke of time- pharmacist roles in the management of cerebrovascular accident

Learning Objectives

At the end of this case, students will be able to:

- Recognize stroke symptoms and when to initiate the emergency care system
- Assist a stroke response team in determining a patient's eligibility for alteplase
- Identify risk factors for stroke and implement strategies to mitigate those risks

Introduction

Stroke is a disease affecting cerebrovascular blood flow, representing the fifth leading cause of death in the United States.¹ According to the Centers for Disease Control and Prevention (CDC), more than 795,000 Americans fall victim to stroke each year, resulting in an estimated \$46 billion in related costs.^{2,3} However, it is believed that 80% of strokes are preventable,¹ leading public health efforts to focus heavily on prevention and awareness. A stroke occurs when blood flow to the brain is impeded, resulting in decreased oxygen, damage to brain cells, and even death.⁴ Strokes are broadly of two major types: hemorrhagic, the result of a leaky or ruptured artery, or more commonly, ischemic, resulting from blockages that prevent blood flow to the brain in the form of a plaque or clot.⁵ Ischemic strokes can be caused by cardiac conditions, atherosclerosis, or small vessel disease.

Several key factors play an important role in an individual's risk of stroke. Pre-existing medical conditions such as hypertension, diabetes, and hyperlipidemia account for 91% of stroke risk. Since lifestyle influences many of these disease states, lifestyle factors such as smoking, sedentary lifestyle, and unhealthy diet account for 74% of an individual's stroke risk.^{3,4} One specific example – nonvalvular atrial fibrillation – increases the risk of stroke by five-fold. Demographics also represent a key indicator in the risk of stroke. While a stroke can occur at any age, the risk of stroke significantly increases with age, and women are more likely to experience them than men. Additionally, race and ethnicity are distinguishing factors in both incidence and mortality, largely due to structural racism and social determinants that have put communities of color at higher risk. Stroke is experienced by Black patients at higher rates than white patients, resulting in the highest rate of stroke-related deaths across all racial groups. While stroke related deaths overall have declined in recent years, Hispanic patients have seen an increase.^{3,4}

As healthcare professionals continue to emphasize the modifiable risk factors associated with the disease as a preventative strategy, public health efforts have focused on the quick recognition of signs and symptoms. Survival and extent of disability is dependent on expedient care. To assist the public in quick recognition of symptoms, the acronym FAST has been utilized: **F** (face drooping), **A** (arm weakness), **S** (speech), and **T** (time) to call 911.⁶ Knowing, recognizing, and acting on the warning signs can be the difference between life and death. Time matters in the acute treatment of stroke, as nearly two million neurons are lost each minute and the brain ages approximately 3.6 years each hour it remains untreated.⁷ Once a patient receives emergency care, they can be evaluated for lifesaving and life-improving medications and procedures, such as alteplase and endovascular thrombectomy.

Since time matters in both the recognition of symptoms and initiation of stroke care, several organizations have established goals and encouraged best practices.^{8,9} In particular, these guidelines aim to reduce door-to-needle times (time from hospital entrance to alteplase administration) and door-to-puncture times (time from hospital entrance to initiation of endovascular thrombectomy). One specific goal is “*Arrive by two, treat by three*,” which implies that a patient should be admitted within two hours and receive treatment within three hours of symptom onset. For the first part of this goal to be possible, community awareness of stroke symptoms and an established system of stroke care between EMS and local hospitals are required. Subsequently, for patients to receive treatment by hour three, hospitals must have an efficient process for determining eligibility and initiating treatment with alteplase or thrombectomy. Pharmacists can and should contribute to timely patient care at each step.

Case (part 1)

Scenario 1.22.1

You are the community pharmacist at a local, independent pharmacy. While filling and checking prescriptions, you are called to the consultation window.

CC: “All of a sudden... I can’t.... speak.... right.”

Patient: CM is a 67-year-old African American woman who is visiting the pharmacy to pick up her monthly medications and to receive her annual influenza vaccination. The pharmacist calls CM to the consultation window to discuss the addition of a pneumonia vaccine, due to her diagnosis of diabetes and her age. As CM begins to answer, the pharmacist notices slurred speech and a slight droop to the right side of CM’s face.

PMH: T2DM; HLD; obesity

SH:

- No alcohol or drug use
- Currently smokes one pack per day

Medications:

- Atorvastatin 20 mg daily
- Metformin 1000 mg daily

Allergies: NKDA

SDH: The patient is a retired schoolteacher who lives with her husband and has reliable insurance coverage.

Case Questions (part 1)

1. What are the key risk factors that CM has for stroke?
2. What action step(s) should you as the pharmacist take in this scenario?

Case (part 2)

Scenario 1.22.1

You are now an emergency department (ED) pharmacist. You are verifying medication orders when your pager goes off, signifying a code stroke. You grab your stroke response box and head to meet the team and the patient.

Patient: CM (65 in, 94 kg) arrives at the hospital via EMS at 11:15am, approximately 38 minutes since the community pharmacist first recognized the stroke symptoms. EMS pre-alerted the hospital, so CM arrived as a code stroke. The stroke team, including the neurologist, meets the patient at the door and determines the patient’s National Institutes of Health Stroke Scale (NIHSS). While the phlebotomist is drawing labs, the neurologist determines her NIHSS is 14. Meanwhile, you confirm home medications with EMS. CM is immediately taken to “imaging” and receives a CT head and a CTA head and neck.

Vitals:

- BP 148/92 mmHg
- HR 88 bpm
- RR 16/min
- Temp 99.6°F

Labs:

- INR: 1.1
- Platelets: 176×10^3 cells/mL
- Glucose: 132 mg/dL

Imaging:

- CT head (11:28am): New loss of gray-white differentiation in the right MCA/PCA watershed territories
- CTA head (11:36am): Right PCA calcified occlusion; proximal right MCA M1 occlusion
- CT perfusion (11:42am): Ischemia in the right MCA territory

Case Questions (part 2)

3. The physician asks for your help determining if the patient is a candidate for alteplase. Does CM meet criteria to receive alteplase?
4. What are the risks and benefits of alteplase?
5. Once the decision is made to administer alteplase, the team asks for the pharmacy to mix and administer the alteplase. What dose should the patient receive, and by what time should CM receive the alteplase?

Case (part 3)

Scenario 1.22.1

You are now the clinical pharmacy specialist with the stroke team at a comprehensive stroke center. You are working up your patients ahead of rounds.

Patient: Unfortunately, the first hospital did not have mechanical thrombectomy capabilities, but it did have a relationship with a nearby comprehensive stroke center with a neuro-interventionalist who can offer those services. CM was transported to your center where she was met by the neuro-intensivist team. She had a successful endovascular thrombectomy procedure (TICI 2B) and is taken to the Neurocritical Care Unit to recover. The stroke team determines that her stroke was cardioembolic, secondary to new onset atrial fibrillation.

Vitals:

- BP 142/88 mmHg
- HR 82 bpm
- RR 16/min
- Temp 98.8°F

Labs:

- LDL: 120 mg/dL
- HgbA1c: 8.1%
- TSH: 1.54 mIU/L
- RPR: non-reactive
- SCr: 0.8 mg/dL

Imaging and procedures:

- MRI brain without contrast: large acute infarction involving the right MCA territory; echocardiogram is recommended to evaluate for central thromboembolic source
- EKG: new onset atrial fibrillation diagnosis
- ECHO/TTE: Left ventricular systolic function is reduction with ejection fraction = 45%; global hypokinesis of the left ventricle

Case Questions (part 3)

6. What modifiable risk factors does CM have for a second stroke?
7. What medications should be initiated?
8. Upon discharge, what actions should the pharmacist take to ensure an appropriate transition of care from the hospital?

Author Commentary

Patients who experience stroke may move through different systems and levels of care created to support timely and appropriate treatment. Pharmacists can play an important role at each of these levels of care – from initiation of stroke care to acute treatment, and finally to preventative care. Integral to these systems of stroke care is the timely identification of symptoms and triage of stroke care. The acronym FAST can be utilized to raise public awareness about the most common symptoms of stroke and the importance of immediate emergency care.⁶ While FAST is a helpful tool, patients should also be educated on the risk of comorbid conditions like hypertension, smoking, and obesity that increase the risk of a stroke, even in younger patients. While educating on the symptoms of acute ischemic stroke, pharmacists should also educate on the importance of timely treatment and utilization of EMS. Overall, only 60% of stroke patients use EMS, which results in earlier ED arrival, improved door-to-imaging and door-to-needle times, and more eligible patients receiving alteplase.¹⁰ Timely alteplase administration improves morbidity, mortality, and disability. Unfortunately, national alteplase treatment rates range from 3-5% of acute ischemic stroke patients, with the most common reason for failure to give alteplase being delay in presentation.¹¹

Stroke awareness and likelihood of EMS utilization is lower among Black and Hispanic patients, resulting in increased risk of prehospital delays in these populations.¹⁰ Disparities in stroke awareness and EMS utilization mimic ethnic disparities in stroke mortality outcomes. It is important to understand that these disparities are rooted in socio-economic disparities that drive health literacy, access to care, and trust in the medical system. As a result, interventions should be geared towards the community's specific needs, with forethought on how to reach these at-risk patients.

Patient Approaches and Opportunities

Pharmacists can provide care at several steps within the stroke systems of care. As the most accessible healthcare providers, pharmacists can educate their patients on risk factors for stroke and stroke symptoms using the FAST campaign.⁶ They can also help to identify stroke symptoms in their patients and initiate emergency care when indicated. Quick initiation, creating opportunity for alteplase administration and other potential interventions, can save important brain function. In the ED, pharmacists must stay abreast of current guidelines to contribute to safe and timely decisions regarding alteplase administration. In particular, pharmacist involvement has been demonstrated to improve door-to-needle times.¹²

While pharmacists must be ever cognizant of the ticking clock, pharmacists helping patients to recover face a long-term battle to reduce secondary event risk and aid in recovery. Stroke recovery and secondary prevention carry their own difficulties. Rehabilitation can be extensive and often only offers medications to reduce risk or to target symptoms. Identification of stroke etiology can help individualize treatment. A pharmacist, supported by clinical evidence, can assist treatment teams in determining anticoagulation versus antiplatelet therapy and selection of the best agent for the individual stroke patient. The pharmacogenomics of stroke is further enabling the individualization of antiplatelet treatment for patients. Secondary prevention should also include lifestyle changes that targets modifiable risk factors. Both medication and lifestyle recommendations require a pharmacist to consider cultural and socioeconomic barriers.

Important Resources

Related chapters of interest:

- [Smoke in mirrors: the continuing problem of tobacco use](#)
- [Sweetening the deal: improving health outcomes for patients with diabetes mellitus](#)

External resources:

- Websites:

- American Stroke Association. <https://www.stroke.org/>
- Journal articles:
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.23: Alcohol use disorder- beyond prohibition

Learning Objectives

At the end of this case, students will be able to:

- Identify resources for diagnostic criteria for alcohol use disorder (AUD) and associated screening tools
- List risk factors for AUD in addition to reasons for under-recognition and undertreatment
- Recommend an appropriate pharmacotherapy regimen for a patient with AUD
- Determine harm reduction strategies and other supportive care recommendations for those individuals who do not identify abstinence as a goal

Introduction

Alcohol use disorder (AUD) is a primary, chronic disease marked by cravings and continued drinking despite adverse outcomes.¹ It involves brain reward, motivation, and memory that can lead to progressive development if left untreated.¹ In 2019, approximately 5.6% of adults aged 18 years or older met criteria for AUD.² In that same year, 1.7% of adolescents, aged 12-17, also met criteria for AUD.² AUD diagnosis and severity are evaluated based on eleven criteria outlined in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*.¹ Despite this high prevalence, it is estimated that AUD is vastly undertreated due to stigma and lack of screening.³ This undertreatment is highly problematic as alcohol is the third leading preventable cause of death in the United States, and the economic burden of alcohol misuse was approximately \$249 billion in 2010.⁴ To improve care, it is important to identify AUD risk factors and screening tools to aid detection, in addition to understanding management of AUD and commonly associated complications, such as alcohol withdrawal syndrome (AWS).

Many risk factors are involved in the development of AUD that account for the heterogeneity of this population.⁵ Typically, female gender, positive family history, younger age, psychiatric comorbidities (particularly depression, anxiety, or personality disorders), and concurrence of other substance use disorders will increase the risk of developing AUD or increase risk for more severe disorder.⁵ However, even in the absence of risk factors, if an individual expresses concern about their alcohol consumption, further investigation is warranted. The US Preventative Service Task Force (USPSTF) recommends screening for unhealthy alcohol use in adults 18 years or older, including pregnant women, and offering interventions to those with risky or hazardous drinking.⁶ A comprehensive list of AUD screening tools is available through the National Institute of Drug Abuse (NIDA); a positive screen indicates further investigation per DSM-5 criteria.⁷

For those that screen positive and meet criteria for AUD based on DSM-5, treatment is indicated.^{8,9} Individuals meeting criteria for mild AUD may respond well to non-medication treatment alone (e.g., psychosocial therapy) but may also receive medication treatment if interested.^{8,9} Generally, individuals with moderate to severe AUD should receive medication as part of their treatment plan, with or without non-medication treatment.^{8,9} Empirical data predicting which patients will respond to which AUD medication is lacking and therefore, an intimate understanding of medication advantages, disadvantages, restrictions, and caveats is important to drive medication choice. Medications may aid in achieving abstinence, maintaining abstinence, or decreasing binge drinking. All patients, particularly those who do not have a goal of abstinence but wish to engage in safer alcohol consumption, should receive counseling on harm reduction. Harm reduction strategies may include adequate hydration and nutrition, setting daily or weekly drinking limits, ensuring all drinks are measured to avoid “free pours” for accurate counting/tracking, and avoiding intoxication, drinking when alone, risky behaviors such as operating a motor vehicle after drinking, and mixing alcohol with other central nervous system depressants.

Two complications of AUD that can be prevented with medications are AWS and vitamin deficiencies.¹⁰ AWS can manifest as a complex group of symptoms upon abrupt alcohol cessation resulting from central nervous system and autonomic hyperexcitability and usually warrants medication intervention.¹⁰ The symptom onset is about 6-24 hours after alcohol cessation and peaks around 48-72 hours; symptoms lessen in severity overtime but may last for weeks.¹⁰ The severity of AWS can be measured by the Clinical Institute Withdrawal Assessment for Alcohol, revised version (CIWA-Ar) and patient should be monitored for a few days given

variability in AWS onset.¹⁰ It is hypothesized that vitamin deficiencies, particularly thiamine, folic acid, and vitamin B6, develop due to poor diet and inability to absorb essential nutrients, both resulting from excessive alcohol consumption.⁸⁻¹⁰ A deficiency in these vitamins can result in abnormal cell function and worsening AWS.⁸⁻¹⁰ Therefore, it is recommended that patients improve diet to correct these deficiencies, but those requiring critical care for AWS management should receive vitamin repletion to prevent severe neurological manifestations of AWS.⁸⁻¹⁰ Additionally, patients should increase hydration to avoid volume depletion and avoid caffeinated beverages.⁸⁻¹⁰

Case

Scenario 1.23.1

You are a pharmacy student working in a primary care setting and are attending daily clinic rounds when the following case is discussed by the team.

CC: “I really need to stop drinking”

Patient: NR (she/her) is a 32-year-old non-Hispanic white female (66 in, 70 kg).

HPI: NR started drinking in high school socially with a few beers at parties with friends. Her drinking became more regular in college because “everyone did it” and she started to feel more anxious in social settings where alcohol helped her relax. Her drinking became daily after college (around age 22) and she has been drinking almost daily for past 10 years, outside of one year of sobriety when she was 29 years old. She was brought to a psychiatric hospital after an alcohol-involved physical altercation one night with her ex-husband in mid-2017. She was hospitalized for a week for alcohol detoxification, was discharged on oral naltrexone 50mg daily, then participated in a partial hospitalization program for two weeks. She stopped taking naltrexone about one year later in mid-2018 though found it helpful for the year that she took it. Today, she endorses alcohol cravings, binge-drinking, “black outs”, drinking alone, and risky behaviors like operating a motor vehicle while impaired. Her last drink was 11pm yesterday, approximately 12 hours prior to clinic visit.

PMH: Bulimia nervosa, in remission (active ages 22 to 30); obsessive-compulsive personality disorder; AUD (severe); social anxiety disorder

FH:

- Father: alive; no known medical conditions
- Mother: alive; HTN, hyperlipidemia
- Sister: alive; generalized anxiety disorder, alopecia areata
- Brother: alive; major depressive disorder, gambling disorder, marijuana use

SH:

- Lifetime non-smoker
- Drinks 4-5 beers on weeknights, and about double this amount on weekends
- Denies use of other substances

SDH: NR endorses a normal childhood. She grew up with two parents in the home (though they divorced when she was 24 years old). She always had a roof over her head, food on the table, a bed to sleep in and always felt safe. She denies physical/sexual abuse, she felt supported and loved by her family growing up, says that she was “popular” in high school, a “star soccer player,” and did well in school. She earned her bachelor’s degree in middle school education and presently works as a fourth-grade teacher. She was married at age 24 and divorced at age 30. She is currently in a relationship with her boyfriend of one year. She lives in her boyfriend’s home with her two daughters (ages 7 and 6) from her prior marriage; she shares custody with her ex-husband. She owns a vehicle, has steady income through work, and has regular access to food. She is sexually active and monogamous with her boyfriend, and she is on long-acting reversible contraception (LARC). She denies any arrests or warrants but notes she has a past episode of domestic violence that resulted in law enforcement involvement. She has never served in the military.

Medications:

- Mirena intrauterine device
- Fluoxetine 40 mg daily

Allergies: NKDA

Vitals

- BP 128/88 mmHg
- HR 65 bpm
- RR 13/min
- Temp 98.6°F

Labs

- CMP normal
- CBC normal

Case Questions

1. What tool would you use to determine the severity of AUD in NR? If this patient did not already have a diagnosis of AUD, what factors place her at an increased risk of developing AUD or a more severe disorder, and where would you find AUD screening tools to screen her?
2. What scale would you recommend using to monitor for AWS and for how many days? Why?
3. For AWS, when would you recommend no treatment (i.e., supportive care only) versus outpatient treatment versus treatment in a medical setting?
4. Which medication for AUD is best to start in this patient that is treatment-seeking? Why?
5. If this patient did not wish to abstain from alcohol completely, would your treatment plan change? If so, to what and why? What harm reduction measures would you discuss with her?
6. Would your treatment plan change if this patient were pregnant?
7. In what circumstances might it be appropriate to trial off-label medications such as gabapentin or topiramate?

Author Commentary

In addition to alcohol use being the leading cause of premature death and disability among those 15 to 29 years old, it has been associated with approximately 2.3 million years of potential life lost and has a direct causal relationship with many mental health conditions including suicide (7 to 37-fold risk), violent crime (costing approximately \$36.7 billion in the United States), unintentional injuries (responsible for 21% of alcohol-involved death), liver disease, infectious diseases, and at least seven types of cancer.¹¹ Additionally, alcohol consumption has been associated with numerous and serious health concerns that outweigh any benefits that may exist; new data demonstrates that the only amount of alcohol that can minimize health complications is zero.¹² Alcohol minimization or elimination should always be encouraged, and prompt recognition and treatment for those with AUD is imperative.

The American Society of Health-System Pharmacists (ASHP) specifically recognizes pharmacist contributions in three areas of AUD: prevention, education, and assistance.¹³ For prevention, pharmacists can contribute to the development of programs and policies that advocate for safer alcohol consumption.¹³ For education, pharmacists can collaborate with clinicians and support groups, in addition to didactic and experiential training of pharmacy trainees, to educate individuals about detrimental effects of excessive alcohol consumptions and appropriate treatment strategies.¹³ Lastly, for assistance, pharmacists can identify those with unhealthy alcohol consumption, assist in pharmacotherapy or other treatment selection, and develop protocols to streamline pharmacotherapy selection and access.¹³

Patient Approaches and Opportunities

All individuals should be screened for unhealthy alcohol consumption and, if positive, should be evaluated for AUD. Upon meeting criteria for AUD, individuals should be promptly offered treatment which may include evaluation and acute management of AWS in addition to chronic management of AUD with non-medication and medication treatment. Treatment plans should be

individualized based on patient preference, health status, comorbidities, and concurrent medications.

There are three FDA-approved agents for AUD (naltrexone, acamprosate, and disulfiram) and two agents (topiramate, gabapentin) that are used off-label for this indication; these medications may be utilized in special populations as well.^{8,9} For elderly and adolescents, naltrexone remains the treatment of choice, but any of these medications are appropriate choices after considering comorbidities and concurrent medications.^{8,9} For pregnancy, abstinence is preferred over pharmacotherapy whenever possible as none of the medications have been proven absolutely safe as all are pregnancy category C medications.^{8,9} The risks and benefits of medications should be weighed against the risks of ongoing alcohol consumption during pregnancy which can lead to miscarriage, stillbirth, premature delivery, fetal alcohol syndrome, or fetal alcohol spectrum disorder.^{8,9} In general, disulfiram is not preferred due to risk of disulfiram-ethanol reaction which is unsafe during pregnancy.^{8,9}

When interacting with patients with AUD, keep in mind that this is chronic illness that is subject to relapse and progression if left untreated. AUD, like many other substance use disorders, is not “cured” by a three- to five- day detoxification alone and requires ongoing medical management to minimize harm to the individual and community and decrease avoidable healthcare costs. Utilizing inviting, non-stigmatizing language to engage and retain patients in care is essential. It is also important to respect the individual’s goals and timeline. Patients should still be supported via harm reduction if abstinence is not their immediate goal.

Important Resources

Other chapters of interest:

- [Safe opioid use in the community setting: reverse the curse?](#)
- [A stigma that undermines care: opioid use disorder and treatment considerations](#)
- [Harm reduction for people who use drugs: A life-saving opportunity](#)
- [Expanding the pharmacists’ role: assessing mental health and suicide](#)

External resources:

- Substance Abuse and Mental Health Services Administration and National Institute on Alcohol Abuse and Alcoholism. Medication for the treatment of alcohol use disorder: a brief guide. HHS Publication No. (SMA) 15-4907. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.
- American Psychiatric Association. *Practice guideline for the pharmacological treatment of patients with alcohol use disorder*. 2018. <https://doi.org/10.1176/appi.books.9781615371969>.
- Lindsay DL, Freedman K, Jarvis M, et al. Executive summary of the American Society of Addiction Medicine (ASAM) clinical practice guideline on alcohol withdrawal management. *J Addict Med* 2020;14(5):376-92.

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 13. ASHP statement on the pharmacist's role in substance abuse prevention, education, and assistance. *Am J Health Syst Pharm* 2016;73(9):e267-70.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.24: Immunizing during a pandemic- considerations for COVID-19 vaccinations

Learning Objectives

At the end of this case, the student pharmacist should be able to:

- Discuss the impact of COVID-19 vaccinations on public and global health
- Describe the role of the pharmacist in the acquisition, administration, patient education, and counseling of COVID-19 vaccines
- List strategies for improving access to immunizations, specifically the COVID-19 vaccine
- Identify requirements for pharmacists who provide immunization services
- Examine partnerships with immunization stakeholders to promote COVID-19 vaccination

Introduction

Pharmacists have served as frontline workers throughout the COVID-19 pandemic, playing a vital role in providing both the COVID-19 vaccine and COVID-19 testing to expand access.^{1,2} Additionally, other public health contributions of pharmacists may apply to COVID-19 vaccinations, such as health promotion efforts (e.g., addressing vaccine hesitancy), health education, patient counseling, concurrent point-of-care testing, and screenings.³ Since the American Pharmacists Association (APhA) Pharmacy-Based Immunization Delivery training program started in 1996, pharmacists have provided immunizations,⁴ making them well-suited to take on this role during a pandemic. The program offers the necessary training for pharmacists to develop the skills needed to administer vaccines, provide patient education (i.e., addressing factors related to vaccine hesitancy), and serve as an advocate for available vaccinations. Since 2009, all 50 states have allowed pharmacists to administer vaccinations with their authority limited by the laws and regulations governing each state.^{4,5}

Given the unique circumstances of the ongoing pandemic, pharmacists in the United States have seen their authority to administer vaccinations broadened in various ways. As of August 2020, pharmacists were authorized to provide a COVID-19 vaccine, when available, to patients three years of age and older.⁶ At the same time, all state-licensed pharmacists and pharmacy interns were given the authority to order and administer vaccines for patients aged three through 18 years.⁷ The Centers for Disease Control and Prevention (CDC) also provided guidance for pharmacists and pharmacy technicians in community pharmacies during the COVID-19 response, including routine clinical services such as vaccinations. In February 2021, the Federal Retail Pharmacy Program launched its first phase, in which pharmacies across the country could provide the COVID-19 vaccine to eligible individuals. This public-private partnership aims to expand access to vaccines for the American public.^{8,9} Such a program highlights the role of pharmacists in mass vaccination efforts during a public health emergency, given their training in vaccine administration, vaccine education, patient counseling, and their rapport and access among the public. Pharmacists also participate in appropriate handling and acquisition of the vaccine supply, particularly in the preservation of the cold chain for many vaccines, including COVID-19 vaccines.¹⁰ Pharmacists may advise using available resources on proper storage of vaccines, equipment selection to preserve the cold chain (e.g., maintenance of temperature in transport/receipt of vaccine, freezer and refrigerator temperatures), handling of temperature excursions, beyond use dating (BUD), and appropriate documentation practices as specified by current information from the CDC.¹¹

Beyond the COVID-19 pandemic, it is also essential to understand pharmacists' roles worldwide during emergencies more generally. Pharmacists' roles seek to reduce the potential for patient harm and hardship with focusing historically on medical supply activities in emergent situations such as pandemics, manmade, or natural disasters.¹¹ Described extensively in a 2006 International Pharmaceutical Federation (FIP) Statement of Professional Standards, these roles include vaccination services and many other services.¹²⁻¹⁴

Case (part 1)

Scenario 1.24.1

You are a pharmacist in a local community pharmacy. A patient comes into your pharmacy seeking advice about reducing his risk of contracting the COVID-19 virus.

CC: “I’m nervous about getting this virus.”

Patient: FM is a 62-year-old male (68 in, 130 kg). His primary care physician told him that he is at risk for severe illness related to COVID-19. He presents to the pharmacy today to pick up some refills for his medications.

PMH: HTN; T2DM; coronary artery disease

Medications:

- Aspirin 81 mg daily
- Amlodipine 5 mg daily
- Lisinopril 20 mg daily
- Metoprolol succinate 50 mg daily
- Metformin 1000 mg twice daily

Additional context: FM is a software engineer, which has allowed him to work from home during the pandemic. He has been wearing a mask and washing his hands frequently, but unfortunately, has not seen his children and grandchildren in almost a year. He is divorced from his husband.

Case Questions (part 1)

1. What are some components of FM’s past medical history that put him at risk for severe illness? What are other risk factors (other than the ones FM has) that may increase a patient’s risk of developing severe illness from COVID-19?
2. What are some ways that patients can protect themselves from getting COVID-19? If in-person visits with family and friends occur, what are some ways patients can help protect themselves and their loved ones?
3. In addition to taking precautions to limit contracting COVID-19, what other advice would you give to FM regarding self-care during a pandemic situation?

Case (part 2)

Scenario 1.24.1

You are a pharmacist in a local community pharmacy. FM returns to your pharmacy a month after your initial conversation, and after Pfizer and Moderna received emergency use authorization (EUs) from the FDA.

CC: “I heard about these new vaccines, but what’s this mRNA thing?”

Patient: FM’s grandson’s second birthday is coming up in a couple of months, and he desperately wishes to see him if possible. He has heard about the new vaccines and wonders about this new technology. FM shares his concerns that the vaccines were rushed and that they have not been appropriately tested. Additionally, he has been told the vaccines utilize new technology – something called mRNA – that he doesn’t understand. He has received other vaccines in the past (e.g., his influenza vaccine this past Fall) but worries the COVID-19 vaccines could be harmful. FM is anxious about what the new vaccine means but is excited about the prospect of being immunized so he can see his children and grandchildren again.

Case Questions (part 2)

4. How would you explain to FM (someone with no medical background) the way mRNA vaccines work?

5. How would you address FM's concerns related to the timing of the vaccines' development? What information can you provide about safety/efficacy and the process for vaccine development during a global pandemic?
6. Vaccine hesitancy is a common barrier to vaccination campaigns during times of crisis. What are some ways that pharmacists can help decrease this barrier and thus, increase vaccination rates in communities?

Case (part 3)

Scenario 1.24.1

During your conversation with FM, you mention that as the vaccines start becoming available pharmacies and pharmacists will likely administer the vaccines, which means he may get his vaccine at the pharmacy when he is eligible. FM did not realize that vaccines, especially the new COVID-19 vaccines, would be available at pharmacies or that pharmacists are allowed to vaccinate.

CC: "I didn't realize pharmacists had anything to do with this."

Case Questions (part 3)

7. Pharmacists must achieve competency to provide vaccine administration. What are some of the skills that must be covered through these training programs?
8. Describe some ways in which pharmacists can help increase access to vaccinations for the general public through collaboration with public health or community partners, particularly in areas where patients may otherwise have difficulty accessing immunizations?

Case (part 4)

Scenario 1.24.1

FM calls the pharmacy a couple of weeks later with more questions about the COVID-19 vaccinations.

CC: "I just want to get the vaccine so that my life can go back to normal."

HPI: Despite his careful consideration, FM is confused by all of the information in the news surrounding who is eligible for the vaccine. He does not believe he is eligible yet, but he has been told by friends in other states that they are already eligible for the vaccine even though they are younger than him and do not seem to be at higher risk. He is frustrated that this can be true and wants to know how to find out when he is eligible. Additionally, he expresses anger at wasting his time trying to Google how to sign up for a vaccine and not finding any information. He is confused as to whether he is supposed to contact his primary care provider to sign up for a vaccine or do it on his own. FM also expresses concern that if he is to find a way to get a vaccine on his own, he doesn't know where to start. Is he supposed to get one at his doctor's office, through the local hospital, or at the pharmacy like you previously mentioned? He wants to know if he could just come to your pharmacy. FM is overwhelmed and asks you to help direct him to understand eligibility criteria and the best way to find information on where he can register. He would like to get the vaccine as soon as possible.

Case Questions (part 4)

9. What resources can a pharmacist refer to in seeking information related to current immunization schedules and guidance for COVID-19 vaccinations?
10. List some resources that pharmacists could make available to patients seeking guidance on safety and efficacy of the COVID-19 vaccine.

Author Commentary

As the novel coronavirus spread worldwide in 2020 and countries looked to potential vaccine development, a significant concern in the United States was whether a large enough workforce existed to administer COVID-19 vaccinations once they were available. A key component to increasing access to the vaccine, particularly in medically underserved communities where easy access to a primary care provider may not exist, is utilizing existing pharmacies and the pharmacy workforce. Additionally, members of underserved communities may have unique transportation issues, and in these circumstances, easy access to a local pharmacy may increase access to vaccination sites. The use of mobile clinics can further enhance access and address barriers such as transportation.^{15,16} Pharmacists can also help establish vaccination sites and expand access to care by completing an immunization delivery training program. The expertise pharmacists gain can be leveraged to deliver immunization services in compliance with legal and regulatory standards, communicate effectively with stakeholders, and provide knowledge on supply chain logistics related to vaccine supply.

The pharmacists' role in expanding the vaccination effort of routine immunizations and the COVID-19 vaccine amidst the pandemic should not be understated. For example, pharmacists can aid with vaccine dilution, preparation, and administration, as well as play a vital role in the storage and transport of vaccinations. This is particularly true for COVID-19 vaccinations that require a cold chain with ultra-cold freezers.^{17,18} Their unique access to the public, patients' trust, knowledge of available vaccines, and training in vaccine administration place them in a prime position to serve in this role. Pharmacists in various settings are at the forefront of expanding vaccine access, both for routine immunizations and during emergencies, to the general population.

Patient Approaches and Opportunities

Pharmacists are one of the most accessible healthcare professionals in the United States, with over 90% of Americans living within five miles of a pharmacy in 2015.¹⁹ Moreover, pharmacist involvement in providing immunizations is not a new concept, with many adults getting their annual influenza vaccine at a local pharmacy annually. Evidence shows that adults who do not get their influenza vaccine in medical settings, such as doctors' offices and hospitals, often receive them at a pharmacy or workplace.²⁰ During the pandemic, pharmacies remained open, and pharmacists served as accessible health professionals providing in person access and vital information.

Throughout a pandemic, pharmacists play an important role in expanding access to vaccines, as well as providing other services such as testing, disease education, telepharmacy, and medication counseling often through collaborative practice agreements.²¹ Pharmacists may play a role in addressing health system disparities and access barriers caused by structural injustice, discrimination, socioeconomic factors, and historical mistrust of the health system.²²⁻²⁴ They must recognize causes of vaccine hesitancy and distrust, such as abuses of biomedical sciences, lack of insurance, vaccine related factors (i.e., cost and availability), transportation challenges, language barriers, and social factors (e.g., immigration status).²²⁻²⁴ To address language barriers and health inequities, strategies include more targeted outreach efforts, and more robust language translation resources. Partnerships should be fostered with trusted civic community leaders/organizations, particularly in areas heavily impacted by COVID-19, to foster relationship building and trust in efforts to reduce vaccine hesitancy and access issues.^{25,26} Materials with clear messaging in multiple languages should be available.

Important Resources

Other chapters of interest:

- [Deciphering immunization codes: making evidence-based recommendations](#)
- [Getting to the point: importance of immunizations for public health](#)
- [Anticipating anthrax and other bioterrorism threats](#)
- [Staying on track: reducing missed immunization opportunities in the pediatric population](#)

External resources:

- APhA Pharmacy-Based Immunization Delivery training. <https://pharmacist.com/Education/Certificate-Training-Programs/Immunization>
- CDC General Resources:
 - COVID-19 vaccination toolkits. <https://www.cdc.gov/vaccines/covid-19/toolkits/index.html>

- COVID-19: people with certain medical conditions. https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extra-precautions%2Fgroups-at-higher-risk.html
- Vaccines for COVID-19. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html>
- COVID-19 vaccination: clinical resources for each COVID-19 vaccine. <https://www.cdc.gov/vaccines/covid-19/index.html>
- Explanation of how vaccines work:
 - The New York Times. How the Pfizer-BioNTech mRNA vaccine works. <https://www.nytimes.com/interactive/2020/health/pfizer-biontech-covid-19-vaccine.html>
 - The New York Times. How Moderna's vaccine works. <https://www.nytimes.com/interactive/2020/health/moderna-covid-19-vaccine.html>
 - Centers for Disease Control and Prevention. Understanding mRNA COVID-19 vaccines. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/mrna.html>
- Emergency Use Authorization (EUA) fact sheets:
 - Food and Drug Administration. Pfizer-BioNTech COVID-19 vaccine. <https://www.fda.gov/media/144414/download>
 - Food and Drug Administration. Moderna COVID-19 vaccine. <https://www.fda.gov/media/144638/download>
- Vaccine access/equity:
 - VaccineFinder. <https://vaccinefinder.org/>
 - Centers for Disease Control and Prevention. Ensuring equity in COVID-19 vaccine distribution. <https://www.cdc.gov/vaccines/covid-19/planning/health-center-program.html>
 - Centers for Disease Control and Prevention. Communication toolkit: for migrants, refugees, and other limited-English proficient populations. <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/communication-toolkit.html>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.25: Sweetening the deal- improving health outcomes for patients with diabetes mellitus

Learning Objectives

At the end of this case, students will be able to:

- Identify the broad factors and social determinants of health that impact health outcomes for patients with diabetes mellitus
- Create optimized medication therapy plans for patients with diabetes mellitus based on individual patient resources
- Deliver culturally appropriate lifestyle counseling for patients with diabetes mellitus
- Identify ways that pharmacists can positively impact care through development of team-based care approaches, utilizing referrals, and connections to community resources

Introduction

Diabetes mellitus (DM) is a chronic metabolic condition that impacts blood glucose levels in the body. According to the Centers for Disease Control and Prevention (CDC), type 2 DM encompasses approximately 90-95% of individuals who are diagnosed, while the remaining 5-10% of persons have type 1 DM. Type 2 DM is the result of a defect in insulin action, also known as insulin sensitivity, while Type 1 DM is an autoimmune reaction which stops the body from producing sufficient insulin. Other forms of DM include gestational diabetes, which develops during pregnancy, and prediabetes, which is an abnormal blood sugar level that has not yet reached the point of a full DM diagnosis.¹⁻²

In the United States, approximately 34.2 million adults have DM, which is the seventh leading cause of death in the US and the leading cause of kidney failure, lower-limb amputations, and adult blindness. It is also a significant contributor to the development of atherosclerotic cardiovascular disease. Populations at highest risk for developing DM includes those who are overweight, over 45 years of age, have a family history of DM, and/or are in one of the following populations: African American, Hispanic/Latino, American Indian, Alaskan Native, Pacific Islander or Asian American. Collectively, racial/ethnic minorities account for approximately 23% of the US population at risk for prediabetes and type 2 DM.¹ Organizations such as the CDC and American Diabetes Association (ADA) have developed numerous strategies to treat and prevent DM, which encompasses lifestyle modifications, dietary changes, and pharmacological interventions.¹⁻³ As pharmacists, it is important to consider a holistic view of the patient, considering not only medications, but lifestyle factors and other social determinants of health that may affect disease management.

The ADA recommends incorporation of care management teams, including various providers, such as pharmacists, nurses, and dietitians, as a strategy to improve the outcomes related to DM.³ Due to extensive medication and disease knowledge, pharmacists are well positioned to participate in management of DM. Involvement of pharmacists across settings, including community pharmacies, primary care clinics, and hospitals has shown positive outcomes related to HgbA1c, blood pressure, low-density lipoprotein (LDL), triglycerides, and body mass index (BMI).⁴ Racial/ethnic minorities appear to also benefit from pharmacist management of DM, with evidence of improved outcomes and patient perceived support regarding medication education and management, non-medication related education, social support, and care coordination.⁵⁻⁶ Collaborative practice agreements, through which a licensed provider refers a patient to a pharmacist under a protocol allowing the pharmacist to perform specific patient care functions, are one way in which pharmacists can become directly involved in DM management to help improve the health of individual patients and larger communities.

Case (part 1)

Scenario 1.25.1

You are a pharmacist in a community pharmacy setting.

CC: “I need to refill my prescriptions.”

Patient: PN is a 48-year-old Vietnamese male (66 in, 75.5 kg).

HPI: Through the assistance of an interpreter service, PN speaks with your pharmacy technician regarding his refills. However, he does not bring the prescription bottles and does not know which medications he needs to have refilled. The technician asks you to review the patient’s medication profile.

PMH: T2DM (x 8 years)

FH: Unknown

SH: Unknown

Medications:

- Metformin 1000 mg one tablet twice daily (#60 last refill one month ago)
- Glipizide 10 mg twice daily (#60, last refill four months ago)
 - Patient reports that he stopped taking it a few months ago because it made him feel “low” while he was at work, and he was afraid of being fired from his job
- Sitagliptin 100 mg once daily (#90, last refill 45 days ago)
- Rosuvastatin 10 mg daily (#90, last refill one month ago)

Allergies: NKDA

SDH: The patient moved with his family to the US from Vietnam approximately nine years ago. He does not drive and relies on public transportation to get to the pharmacy. He has Medicaid insurance with \$0 copays for covered medications on a limited drug formulary.

Case Questions (part 1)

1. What questions can the pharmacist ask PN to identify the factors contributing to their nonadherence?
2. What causes might be contributing to PN’s reported/unconfirmed hypoglycemia?
3. What types of resources can community pharmacists provide or connect patients to improve health outcomes associated with DM?

Case (part 2)

Scenario 1.25.1

You are now a pharmacist in a family medicine clinic.

CC: “I know I should be taking better care of myself to improve my blood sugar control, but I am so busy and constantly worried about my family and their wellbeing that I don’t have time for myself.”

Patient: PN presents to your family medicine clinic for an initial comprehensive medication management visit after medication non-adherence was identified by the community pharmacist. His wife accompanies him today and helps to translate.

FH:

- Mother: alive; T2DM
- Father: alive; HTN
- Maternal grandfather: deceased; T2DM
- Four children; two live in Vietnam, two live with him

SH:

- Tobacco smoker x 30 years
- Drinks alcohol socially

ROS: (+) polyuria, polydipsia, numbness in fingers

Surgical history: None

Vitals:

- BP 130/78 mmHg
- HR 90 bpm

Labs:

Lab	1 month ago	3 months ago	9 months ago	Normal range
HgbA1c	12.1%	10.6%	13.0%	4.2-6.5%
TSH		2.16 IU/mL		0.34-5.60 IU/mL
Na	138 mEq/L		130 mEq/L	136-145 mEq/L
K	4.4 mEq/L		4.1 mEq/L	3.4-5.0 mEq/L
SCr	1.2 mg/dL		0.8 mg/dL	0.6-1.3 mg/dL
Glu (random)	259 mg/dL		314 mg/dL	70-99 mg/dL
Total chol	153 mg/dL			100-199 mg/dL
TG	361 mg/dL			0-149 mg/dL
HDL	29 mg/dL			50 mg/dL
LDL	52 mg/dL			0-99 mg/dL
Alb:Cr	>300 mg/g		30-300 mg/g	0-30 mg/g

SDH: The patient speaks only Vietnamese. PN lives in a multigenerational household with his wife, children and two grandchildren. He works two jobs to support everyone, including a day job at a Vietnamese restaurant and an evening job as a janitor at elementary school. He relies on public transportation and takes multiple buses across the city to get to the clinic.

His annual income is at 75% of the federal poverty level, which, based on the size of his household, qualifies him for Medicaid with a limited drug formulary that includes prior authorization requirements for sodium-glucose co-transporter 2 inhibitors (SGLT2i) and glucagon-like peptide-1 (GLP-1) agonists. In the past, the patient has expressed concern about utilizing injectable medications as he and his family associate this with loss of limb and even death, plus he states that he is fearful of being perceived by his boss as injecting “drugs.” Additionally, he does not want his family members to think that he is no longer capable of providing for their needs. He has a relatively good understanding of his medical diagnosis and the importance of managing it.

PN states that he eats a traditional Vietnamese diet. His breakfast consists of Vietnamese coffee, with white rice with eggs. His lunch is usually rice with some sort of meat (chicken/pork/beef) and various vegetables. His dinner consists of either a noodle or rice dish (like lunch). He drinks a variety of beverages (tea, water, fruit juices, coffee) and eats snacks such as rice cakes and fruits. He says he does not engage in regular physical exercise.

Case Questions (part 2)

4. What social determinants of health may be impacting PN and how might these negatively affect his type 2 DM control?
5. What type of referrals can the ambulatory care pharmacist make that would be beneficial for improving health outcomes for this patient?
6. Considering patient-specific factors, how would you approach lifestyle counseling with PN?
7. Create a medication therapy plan to improve PN's DM outcomes, including monitoring and follow-up. How would you address the patient's concerns about injectable therapy?

Author Commentary

The prevalence of DM in Asian adults living in the US is 19.1%.⁷ Asian Americans develop type 2 DM at younger ages and at lower body weights compared to the general population in the US, leading to one in two Asian Americans who have DM not being aware of their diagnosis.⁸ This is important to consider when screening this population for type 2 DM, and once a diagnosis is established, culturally appropriate treatment and counseling is necessary to ensure respectful and effective treatment. Factors that may impact patients' goals, treatment and blood glucose management include lifestyle, race/ethnicity, and cultural perceptions.⁹ Minoritized racial and ethnic groups, including Asian Americans, should be treated in a way that addresses specific barriers and cultural beliefs and misconceptions.¹⁰ Moreover, prevailing social determinants of health and systemic inequality in access to healthcare services continue to have significant negative consequences on health outcomes for people living with DM.¹¹

DM is a major public health concern, especially among certain racial and ethnic communities, in the US and across the world.¹² As the third-largest group of healthcare professionals in the US, pharmacists must play a role in preventing and improving health outcomes related to DM.¹³ Due to a growing shortage of primary care providers and an increasing number of medication classes approved for use in DM, the accessibility and knowledge of pharmacists is becoming increasingly important to help curb this public health concern.¹⁴⁻¹⁵

Patient Approaches and Opportunities

Pharmacists have a unique opportunity to contribute to the management of DM due to their drug therapy expertise, ability to optimize medications while considering cost effectiveness, and availability for counseling and educating patients on adherence and lifestyle considerations.¹⁶ Addressing patient-specific goals and barriers such as diet, exercise, familial obligations, and treatment options promotes shared-decision making with patients. While pharmacists can make significant contributions to improving DM-related health outcomes, it is important to recognize limitations within this role and be able to effectively utilize available resources to enhance patient care. Furthermore, collaboration among pharmacists working in different settings (e.g., community, ambulatory care, hospital inpatient, long-term care) and between pharmacists and other healthcare professionals will help to address barriers and ensure adequate, equitable treatment for patients in our communities.

Important Resources

Related chapters of interest:

- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [Let your pharmacist be your guide: navigating barriers to pharmaceutical access](#)
- [Uncrossed wires: working with non-English speaking patient populations](#)
- [Only a mirage: searching for healthy options in a food desert](#)
- [The great undoing: a multigenerational journey from systemic racism to social determinants of health](#)
- [Experiences of a Caribbean immigrant: going beyond clinical care](#)
- [You say medication, I say meditation: effectively caring for diverse populations](#)
- [Digging deeper: improving health communication with patients](#)

External resources:

- Websites:
 - ADA Standards of Medical Care in Diabetes. <https://professional.diabetes.org/content-page/practice-guidelines-resources>
 - Centers for Disease Control and Prevention. Diabetes. <https://www.cdc.gov/diabetes/index.html>
 - National Diabetes Prevention Program. <https://www.cdc.gov/diabetes/prevention/index.html>
 - US Diabetes Surveillance System. <https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>
 - US Department of Health and Human Services Office of Minority Health. <https://minorityhealth.hhs.gov/>
 - CultureVision. <https://www.crculturevision.com>
 - USDA Ethnic & Cultural Resources. <https://www.nal.usda.gov/fnic/ethnic-and-cultural-resources-0>

- EthnoMED. <https://ethnomed.org>
- Journal articles:
 - De Souza LR, Chan KT, Kobayashi K, Karasiuk A, Fuller-Thomson E. The prevalence and management of diabetes among Vietnamese Americans: a population-based survey of an understudied ethnic group. *Chronic Illn* 2020; 1742395320959422.
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.26: The hidden burden of hemodialysis- personal and economic impacts

Learning Objectives

At the end of this case, students will be able to:

- Describe the epidemiology of chronic kidney disease and end stage renal disease in the United States
- Evaluate personal and economic burdens that may be relevant for patients with end stage renal disease
- Identify the role and most common responsibilities of the pharmacist in the care of patients with end stage renal disease

Introduction

Chronic kidney disease (CKD) affects a growing number of individuals worldwide, with a prevalence of between 5 to 15% in US adults.^{1,2} The highest incidence of CKD is in those 65 years of age or older, with diabetes mellitus and hypertension being primary causes in adults.² CKD and end stage renal or kidney disease (ESRD/ESKD) are often associated with increased rates of mortality and morbidity, with progression of CKD to ESRD associated with frequent complications, such as electrolyte abnormalities, anemia of chronic disease, secondary hyperparathyroidism, hypertension, metabolic disorders, and pruritus.¹ In ESRD, the two main dialysis modalities are hemodialysis (HD) and peritoneal dialysis (PD); there is also the option for renal transplantation.³ Patient factors, local practice-patterns, and clinician-patient discussion are needed to decide on the best possible patient centered modality of treatment for ESRD; with hemodialysis being the most common therapeutic modality in the United States.³

The personal and economic impacts of ESRD and dialysis are significant. A large proportion of the impact is due to incurred healthcare costs for managing clinical complexity, comorbidities, loss of productivity as well as associated premature mortality.⁴ From a societal perspective, ESRD affects the patient, caregiver, employer, and healthcare system as a whole in the United States.⁴ Patients with ESRD must manage direct costs of medical procedures, diagnostics, laboratory tests, medications, vaccinations, healthcare provider visits, hospitalizations, dialysis, transportation to and from appointments as well as absenteeism from work due to these factors.⁴ With varying modalities for dialysis, including the option for more frequent home-based dialysis, the complexity of patient and caregiver burdens are high, especially as in varying instances those caregivers may be unpaid family compared to paid caregivers in other instances.⁵

The macro-level economic impacts of ESRD in the United States are also widespread. The Medicare program is the predominant payer for those patients receiving dialysis, with the remainder of care funded by Medicaid or other payers.⁶ While the government is the primary funding source, most dialysis services are provided through private, for-profit, facilities with two private companies caring for an estimated 63% of dialysis patients in 2011.⁶ The financial burden of care for these individuals is high, accounting for approximately 7% of the Medicare spending (\$46.6 billion in 2017) despite only composing approximately 1% of the Medicare population.⁶ Out-of-pocket costs for ESRD patients was estimated at \$3.5 billion in 2017, demonstrating the significant burden on patients even with a government funded program.⁶

Once a decision has been made concomitantly by the clinician and patient to start dialysis, a multidisciplinary team of physicians, nurses, dietitians, pharmacists, and other allied health professionals often become involved in the patient's care.¹ Pharmacists, in both inpatient and outpatient settings, are involved in activities related to dialysis, medication dosing and medication reconciliation. A systematic review of the literature found that most available evidence of the clinical activities of pharmacists in CKD is descriptive in nature with all studies reporting some positive impact resulting from clinical pharmacist involvement.¹

Case

Scenario 1.26.1

You are a pharmacist working on an inpatient internal medicine service on a Saturday. Your team is currently consulting nephrology to discuss NK's case after he has been admitted with bacteremia.

CC: "I have gotten very weak over the last few days. I missed dialysis yesterday [Friday] and was not able to stay the full time Wednesday."

Patient: NK is a 62-year-old male (71 in, 84 kg) who presented to the emergency department (ED) due to persistent lethargy and weakness. He is frequently seen in the ED due to missed dialysis sessions. During his current hospital admission, he is found to have MRSA bacteremia.

HPI: NK has been a HD patient for seven years now. NK initially started on PD but had multiple episodes of peritonitis, infection, and catheter malfunction that led to a discussion with his nephrologist to consider transitioning to hemodialysis.

PMH: ESRD secondary to diabetic nephropathy; T2DM; neuropathy; chronic lower back pain; major depressive disorder; atrial fibrillation; anemia; mineral bone disease

FH:

- Mother: deceased (breast cancer); HTN
- Father: deceased; T2DM, HTN, and CKD
- Sister: T2DM, HTN, hypothyroidism

SH:

- Drinks alcoholic beverages rarely
- Does not use nicotine, illicit substances, or non-prescribed medications

Medications:

- Oral therapies
 - Fosinopril 20 mg daily
 - Amlodipine 10 mg daily
 - Bisoprolol 5 mg daily with supper
 - Warfarin 1 mg as directed (INR target 2-3)
 - Calcitriol 0.25 mcg three times weekly at dialysis
 - Sevelamer carbonate 1600 mg three times daily with meals
 - Glyburide 2.5 mg daily with breakfast
 - Gabapentin 200 mg nightly and before start of each hemodialysis session
 - Amitriptyline 25 mg at bedtime
 - Fluoxetine 10 mg once daily
 - Replavite multivitamin daily in morning
 - Acetaminophen 1 g three times a day with meals
- Parenteral therapies
 - Vancomycin IV per hemodialysis/bacteremia protocol
 - For treatment of MRSA bacteremia
 - Etelcalcetide 5mg IV three times weekly at dialysis
 - Insulin glargine 10 units SQ nightly
 - Morning blood glucose range 84-113 mg/dL
 - Iron sucrose 100 mg IV at dialysis
 - Epoetin-alpha 6,000 units IV three times weekly at dialysis
 - When Hgb <10 g/dL

Allergies:

- Morphine intolerance
 - Itching within hours of administration on two different occurrences
- No other drug allergies
- No known food allergies
- Allergic to cat dander

Vitals:

- Dialysis clinic vitals from last Wednesday
 - Before dialysis: BP (seated) 160/65 mmHg and HR 72 bpm
 - One hour into dialysis: BP 105/60 mmHg and HR 65 bpm

Labs:

Parameter	Value	Parameter	Value
Na	139 mEq/L	PTH	724 pg/mL
K	5.7 mEq/L	RBC	3.3×10^6 cells/mm ³
Cl	101 mEq/L	Platelets	160×10^6 cells/mm ³
CO ₂	17 mEq/L	Hgb	9.3 g/dL
BUN	53 mg/dL	Hct	34.7%
SCr	9.2 mg/dL	HgbA1c	6.9%
Glu	103 mg/dL	Ferritin	234 microg/L
Ca	9.3 mg/dL	TSAT	27%
Phos	5.3 mg/dL		

Surgical history: Above the knee amputation of right leg (three years prior) secondary to osteomyelitis

SDH: Over the last three years, NK has confided in the nephrology team's social worker that his situation has become more difficult since a right leg amputation due to a bone infection and long-standing T2DM. He is frustrated because his dialysis sessions are scheduled very early in the morning when there are no busses running from his place to the dialysis center or if the bus is running, he cannot get to the stop fast enough and misses it entirely then still has to pay for a cab.

He was previously employed as a truck driver but was unable to continue work after his amputation and was laid off. He is scared because money is tight, and he has even had to start taking his medications differently to make sure they last before he can afford to get them filled again, especially when he needs to meet his deductible or is in his Medicare coverage gap "donut hole". NK has been trying to make ends meet and pay for all the "stuff" that goes with dialysis, but he feels alone and frustrated.

NK is divorced with two adult children (ages 27 and 31). He doesn't want to lean on his daughters too much because they are stressed with work and already make sure he has a place to live, with food and company. This week has been more difficult because NK has been trying to interview for different jobs between dialysis sessions so has been missing a lot of time in the clinic. NK thought it was the stress that made him feel weaker over the last few days but this morning when his one of his daughters came to help him get upstairs for breakfast, he almost passed out when he got up. He was shivering and could barely sit. His daughter called 911 and he was brought by ambulance to the ED.

Case Questions

1. What are the most common criteria considered for dialysis in ESRD?
2. List the most common burdens associated with dialysis and describe how these burdens can be taken into consideration for NK's case.
3. Describe the role of the pharmacist as part of the clinical team in helping patients with management of ESRD.
4. Provide an approach to help NK manage cost of medications due to recent financial burdens. Which medications could be discontinued or changed?

5. Describe the funding of dialysis programs within the United States.
6. Discuss dialysis associated burdens from a patient perspective on a global scale. How are these burdens similar and different from the United States?
7. List factors that increase the economic burden of dialysis outside of those covered by Medicare.

Author Commentary

Patients on dialysis face a myriad of health care challenges including transportation to and from dialysis sessions,⁷ including rigid time requirements by transportation companies, co-morbidities that can impair self-transportation, renovascular and dialysis complications that can impair driving abilities, and lack of social support. The ability for a patient to get to dialysis is critical due to the documented increase in morbidity and mortality associated with dialysis non-compliance.⁸ Medicare specifically accounts for the funding of those on renal replacement therapy and this small patient population accounts for a substantial portion of the overall Medicare spending given the relatively small patient pool.⁶ However, realizing the myriad expenses for patients, both direct (e.g., out-of-pocket medical payments, transportation costs, the price of healthy foods) and indirect (e.g., the economic losses through decreased work opportunities) is key to understanding the total financial burden of ESRD.

Pharmacists play a significant role in the care of dialysis patients. In the community setting, they are one of the most accessible providers and can answer medication related questions, which is especially important given that many dialysis patients face polypharmacy challenges. In the ambulatory and institutional setting, pharmacists collaborate with providers to optimize medication and non-medication treatments. In these roles, pharmacists may be the first to assess the patient's social determinants of health and address those barriers to optimize patient care. Pharmacists are encouraged to engage with the interdisciplinary team (e.g., nephrologist, dietician, social work, nurses, and other professions) to resolve these challenges and decrease the burden placed on the patient.

Patient Approaches and Opportunities

It is important to identify social determinants of health that may adversely impact patients who have ESRD. Patients should have a clear understanding of dietary needs, access to reliable transportation, and the ability to access health care resources. Pharmacists can play a significant role in assessing and addressing gaps in health literacy within this patient population as it pertains to medications.

In reviewing medications for patients on dialysis, it is important to discuss the patient's ability to afford those medications and to manage their medication regimen. Patients should be counseled on the timing of medications with regard to their dialysis sessions. As non-nephrology providers may not have as much experience with drug dosing for patients with ESRD, it is important that all medications be evaluated for efficacy and safety. Potential adverse effects and drug interactions should be communicated with patients' nephrologists and other prescribing providers to limit adverse events and improve patient outcomes.

Important Resources

Related chapters of interest:

- [Interprofessional collaboration: transforming public health through team work](#)
- [Deprescribing in palliative care: applying knowledge translation strategies](#)
- [Digging deeper: improving health communication with patients](#)

External resources:

- Kidney 360. Global Dialysis Perspective series. <https://kidney360.asnjournals.org/cc/globaldial>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.27: Only a mirage- searching for healthy options in a food desert

Learning Objectives

At the end of this case, students will be able to:

- Define food insecurity and its potential causes
- Explain how food insecurity may impact patient outcomes
- Recommend appropriate food choices for a patient living in a food desert
- Identify key therapeutic considerations and counseling points for a patient with food insecurity

Introduction

Food insecurity is defined by the United States Department of Agriculture (USDA) as *“a lack of consistent access to enough food for an active, healthy life.”*¹ There are various patterns of food insecurity, and it may impact patients uniquely and intermittently. The SEARCH mnemonic (**S**creen, **E**ducate, **A**ddress, **R**ecognize, **C**onnect, **H**elp) is one way to ascertain who may be experiencing food insecurity and ensuring appropriate steps are taken to address the issue.²

One driver of food insecurity may be socioeconomic status and limited ability to purchase healthy or fresh foods. A validated two-item screening tool may be used to ascertain whether a patient is impacted by this type of food insecurity: (1) within the past 12 months we worried whether our food would run out before we got money to buy more, or (2) within the past 12 months the food we bought just didn't last, and we didn't have money to get more.² If the patient responds with an affirmative answer to either of these questions, further exploration about the patient's circumstances is necessary.

Another contributing factor to food insecurity is living in a food desert. The term “food desert” is a term used today that was adapted from the United Kingdom to reference neighborhoods that are deprived of food due to expenses and unavailability.^{3,4} A food desert is defined as *“a geographic area, typically at the neighborhood scale or greater, in which residents experience physical and economic access barriers to affordable and healthful food procurement.”*⁵ In the Food, Conservation, and Energy Act, the USDA was directed to assess areas in the nation where Americans had limited access to food that was affordable and healthy. It was concluded that 23.5 million people live in low-income locations greater than one mile from a large grocery store or supermarket, with 11.5 million of these people qualifying as low-income themselves.^{6,7}

Households of low income and ethnic minorities rely heavily on the food environment in their immediate neighborhood.⁸ Inadequacies such as transportation and socioeconomic status limit individuals to having their foods supplied by a convenience store or retailer in which food options are packaged and non-perishable, compromising the nutritional value.⁵ Living in a food desert is a social determinant of health (SDH/SDOH) and is linked to higher incidences of obesity, diabetes, and cardiovascular disease due to limited fruit and vegetable consumption.⁹ Diets consisting of foods that are highly processed, energy-dense, and nutrient poor are prevalent in low-income neighborhoods where fast food restaurants are bountiful, yet grocery stores with high-quality, fresh, healthy foods are scarce.¹⁰

Income segregation also plays a large role in both the purchasing decisions of consumers and the profit-maximization of grocery stores. Profits for grocery stores are maximized when located in wealthier neighborhoods; consequently, grocery stores may locate further away from poor neighborhoods. Stores located in poor neighborhoods may not prioritize stocking healthy foods. Therefore, low-income families may need to travel further to have access to fresh, unprocessed, nutritional foods.¹¹ Patients in food deserts either resort to consuming sub-optimal foods due to availability or must spend extra time and money commuting to the nearest grocery store. This cycle may directly contribute to poor health outcomes because of having to settle for what food is available within close proximity. It may also contribute indirectly by choosing to spend extra money on healthy foods, which may result in less money remaining for other resources. Purchasing prescriptions or scheduling routine check-up appointments may lose prioritization when there are insufficient funds remaining to prevent and properly manage chronic disease states.¹²

Case

Scenario 1.27.1

You are a pharmacist practicing in a family medicine ambulatory care clinic

CC: “I am here for a follow-up appointment.”

Patient: TM is a 66-year-old African American male (68 in, 95kg) who presents to the office for his T2DM management follow up with the clinical pharmacist.

PMH: T2DM; gout; HLD; HTN; peripheral vascular disease; urinary retention; seizures

FH:

- Mother, father, brother, and grandparents: deceased due to cardiac history
- Brother: kidney cancer

SH:

- Former smoker (quit three years ago); 60 pack years (1.5 packs per day for 40 years)
- Former alcohol use (quit three years ago)
- Denies illicit drug use

Allergies: Penicillin (rash)

Vitals:

- BP 123/75 mmHg
- HR 76 bpm
- RR 16/min
- Temp 98.6°F
- Pulse ox 96% on RA

Labs:

Parameter	Value	Parameter	Value
Na	142 mmol/L	AST	10 U/L
K	4.5 mmol/L	ALT	13 U/L
Cl	100 mmol/L	LDL	71 mg/dL
CO ₂	24 mmol/L	HDL	42 mg/dL
BUN	38 mg/dL	Triglycerides	23 mg/dL
SCr	1.05 mg/dL	Total cholesterol	159 mg/dL
GFR	85 mL/min	Ca	9.8 mg/dL
Glu	87 mg/dL	Microalb/creat ratio	18 mg/g
HgbA1c	9%		

Medications:

- Aspirin 81 mg once daily
- Carbamazepine 200 mg – one tablet every morning and 1.5 tablets every evening
- Colchicine 0.6 mg once daily

- Folic acid 1 mg once daily
- Humalog 100 units/mL – 5 units subcutaneously before breakfast and 10 units before dinner
- Hydrochlorothiazide 25 mg once daily
- Lantus 100 units/mL – 44 units subcutaneously once daily before bedtime
- Levetiracetam 750 mg twice daily
- Metformin 500 mg – two tablets twice daily
- Metoprolol succinate ER 50 mg twice daily
- Rosuvastatin 20 mg once daily
- Tamsulosin 0.4 mg once daily
- Thiamine 100 mg once daily

SDH: TM currently has Medicare for insurance. He has a limited income and has not worked in many years due to his medical conditions. He currently does not have a car and the only place to buy food in his town is a dollar store. He lives with estranged wife and her adult son, while TM's four adult children live out of state.

Additional context: The patient reports that his typical diet consists of the following examples. Breakfast includes one big bowl of honey oat cereal (about two cups) with milk, while lunch would be frozen fettuccine alfredo entree or sandwich on white bread (salami and pepper jack cheese). Dinner is generally a steamed dish from a local Chinese takeout store or General Tso's chicken with broccoli and brown rice. TM reports that he will eat half and save the other half for the next evening. He mentions that his snacks include granola bars and sometimes crackers, and his beverages are primarily water with daily coffee. Regarding his self-monitored blood glucose readings from the past ten days, TM reports the following values (mg/dL):

- Fasting: 156, 179, 155, 160, 152, 157, 170, 160, 154, 155
- Two hours after dinner: 201, 233, 221, 254, 244, 235, 255, 230

Case Questions

1. The “S” in the SEARCH mnemonic stands for “Screen”. What questions would you want to ask TM to assess for potential food insecurities and to direct next steps?
2. What clinical parameters observed in TM may be influenced by limited food choices?
3. As a pharmacist, what are some specific considerations that you need to consider when recommending and monitoring medications for patients like TM with food insecurity?
4. What are some healthy eating strategies that TM is currently embracing?
5. In general, what nutritional advice should you provide to TM and patients with similar disease states?
6. Patients who must shop at dollar stores face limited food choices. **Table 1** provides a list of foods commonly available for purchase at dollar stores. What are some specific recommendations and potential food swaps that you can suggest to TM to optimize healthy eating?

Table 1. Foods commonly available for purchase at dollar stores

Type of food	Examples
Refrigerated foods	Beef and broccoli Asian noodle bowl Cheese: mild cheddar, pepper jack Cheese ziti with meat sauce Chicken fajita bowl Cream cheese Lunch meat: bologna, salami Milk: vitamin D, low fat chocolate Margarine
Frozen foods	Entrees: chicken/turkey/beef pot pie; Salisbury steak meal; fettuccine alfredo; penne with white chicken and cream sauce Fruits: blueberries, mixed berry blend, sliced peaches, strawberries Meat and fish: breaded chicken patties; breaded chicken nuggets; boneless pork riblets, cod, tilapia, salmon fillet, shrimp Vegetables: asparagus spears, broccoli, cauliflower, pepper stir fry Waffles

Type of food	Examples
Dried foods	Bread: white, wheat Cereal: bran, honey oats, crisped rice Cookies: chocolate chip, vanilla wafers Crackers: graham, saltines, wheat Dried mixed fruits Fruit snacks Granola bars Lentils Macaroni and cheese Nuts and seeds: almonds, cashews, peanuts, pistachios, sunflower kernels Tortillas: corn, flour Oatmeal: quick oats, instant Pasta: elbow macaroni, penne, rotini, spaghetti Rice: brown, white, yellow
Canned, jarred, or bottled foods	Applesauce Beans: black, kidney, pinto Fruit: mandarin oranges, pears, peaches, pineapple Meat: chicken, salmon, tuna Salad dressings: Italian, ranch, raspberry, balsamic vinaigrette Soups: classic chicken noodle; low sodium chicken noodle; tomato; vegetable; beef Vegetables: beets, green beans, sweet carrots, sweet corn, sweet potatoes, yams, vegetable blend, white potatoes

7. What types of community-based resources should you connect TM to?
8. Oftentimes patients face multiple challenges in addition to living in a food desert, such as a non-working refrigerator. Examine your answer to Question 5 and TM's medication list. What modifications or counseling would you need to provide to TM in the event he did not have a working refrigerator or freezer?
9. If at a follow-up appointment it is determined that changes to diet do not help bring his clinical parameters to goal, what would you recommend then?

Author Commentary

A healthy diet is a key component to preventing and managing many chronic disease states. Pharmacists can play an important role in helping patients understand dietary recommendations. However, before rushing to suggest changes to food choices, pharmacists must first understand the role food insecurities may play in their patient's life and ascertain options patients have available to them. Food insecurity looks different from patient to patient, and may be intermittent.¹² Food deserts, in particular, may be a contributing factor to consider regarding food insecurity. By better understanding each patient's individual situation, pharmacists can tailor their recommendations to options that will be realistic for the patient to find and purchase. Even small modifications to diet can improve patient outcomes, so a few targeted and manageable changes is a good place to start.¹³

Furthermore, pharmacists have an opportunity to serve an important function in clinical-community linkages, connections between health care providers, public health agencies, and community-based organizations. Pharmacists should take the time to familiarize themselves with the resources available within the community they practice in and could even develop a toolkit for staff use containing information regarding assistance programs for specific populations (e.g., elderly, children, families, pregnant women) and the process for referral.¹⁴ Pharmacists can also advocate on behalf of the communities they serve, such as for policies working toward equitable access to food.²

Patient Approaches and Opportunities

It is important for pharmacists and student pharmacists to learn about what food insecurity is, the prevalence of food insecurity within the communities they live and work in, and the impact it has on patient health outcomes. The repercussions of ignoring a patient's circumstances can be detrimental. It is prudent to embrace the components of SEARCH: **S**creening to see if food insecurity is present, **E**ducating patients who are at risk of coping strategies, **A**ddjusting patient's medications and/or meal plans as necessary based on their food insecurities, **R**ecognizing the potential intermittent nature of food insecurity and how it may

be unique for each individual, **C**onnecting patients with resources in the community, and **H**elping ourselves and other healthcare professionals make the very important connection between food insecurity and health outcomes.^{1,2} Healthcare providers should familiarize themselves with resources available in the community and utilize other members of the team such as social workers so they can connect patients with the appropriate resources. Following up with patients to ensure connections were made and patients were able to obtain needed resources is essential.²

Engage in open dialogue with your patients about food insecurity and what it may mean in terms of preventing and managing chronic conditions and choosing medications that are appropriate and safe. Ensure the care and recommendations that are provided are truly patient-centered and utilize shared decision-making strategies. Understand your patient's coping strategies and discuss realistic ways to embrace healthier strategies. Some examples of how people may cope with food insecurity include prioritizing quantity of food versus quality of food, diluting food and beverages, eating one heavy meal a day, choosing lower-cost fast foods, skipping meals, or overeating during times of food availability. Educate patients about the link between health, medical conditions, medications, and diet to enhance their understanding and perhaps, acceptance of recommendations. As with most recommendations, utilize motivational interviewing techniques and support the patient's decisions.^{2,12}

Important Resources

Related chapters of interest:

- [More than just diet and exercise: social determinants of health and well-being](#)
- [Plant now, harvest later: services for rural underserved patients](#)
- [Communicating health information: hidden barriers and practical approaches](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Sweetening the deal: improving health outcomes for patients with diabetes mellitus](#)
- [Experiences of a Caribbean immigrant: going beyond clinical care](#)

External resources:

- Websites:
 - American Diabetes Association. <https://www.diabetes.org>
 - Aunt Bertha. www.findhelp.org
 - Food Apartheid. What does food access mean in America? – <https://nutritionstudies.org/food-apartheid-what-does-food-access-mean-in-america/>
 - Food Empowerment Project. <https://foodispower.org/access-health/food-deserts/>
 - Healthy Food Access Portal. <https://www.healthyfoodaccess.org/>
 - Hunger Relief Organizations. <https://www.nal.usda.gov/fnic/hunger-relief-organizations>
 - USDA Food Access Research Atlas. <https://www.ers.usda.gov/data-products/food-access-research-atlas/>
- Articles and white papers:
 - American Hospital Association. Food insecurity and the role of hospitals. <http://www.hpoe.org/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf>
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.28: Sex education- counseling patients from various cultural backgrounds

Learning Objectives

At the end of this case, students will be able to:

- Consider cultural and social perspectives regarding sex education
- Describe ways to educate multi-generational patients from different cultures about sex education
- Illustrate how to use culturally sensitive communication in high stakes conversations
- Create a communication plan using personal knowledge and community resources to provide sex education

Introduction

Education on sexual practice varies widely in different countries, nations, cultures, and religions. Sexuality is often tied to morals and personal values, in addition to its status as a health topic. Whether a person sees sexuality as natural versus sacred may determine how they view sex education. Under a natural framework, sexuality is a factor of the human experience equal to any other bodily function and should be taught with the same emphasis. When seen as a sacred function, sexuality is placed differently compared to the education of other aspects of bodily function. While this sacredness is widely respected, it may render the subject taboo or limited in educational discussions.

Comprehensive sexual education includes the physical, emotional, intellectual, and social aspects of sexuality and interpersonal relationships/connections, and not just the physical act of sex.¹ Government leaders and parents, in some cultures, believe that early sexual education will lead to earlier sexual activity. However, it is more common that countries with more structured sexual education teaching have lower rates of teenage pregnancy.^{2,3} In some countries, sexual education is taught extensively in schools, whereas in others, the subject is not allowed in schools. For instance, in the United Kingdom, sexual education is mandatory, but each school varies in how they approach the subject. The emergence of human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) in the 1980s in the United States increased demand for sex education beyond abstinence; however, there is still not a federal mandate for sexual education.^{4,5} In Belgium, there is a sexual education website curated for youth that children as young as seven years old can view and understand,⁶ however, there are other countries where sexual education isn't allowed in schools. In India, sex education is not mandatory in schools, but the Youth Parliament Foundation established in 2002 is increasing information availability, including through one of their campaigns, "know your body, know your rights" (KYBKRY).^{7,8}

There are many socio-cultural challenges to sexual education around the world. One important concern is that in countries where sex education is not taught thoroughly or is not the same between different schools, some young people may not be able to recognize signs of sexual abuse. Education on sexual health is encouraged by the United Nations, which has a health agency dedicated to sexual and reproductive health.⁹⁻¹¹ For example, child marriage and female genital mutilation (FGM) are practiced in many countries globally and are particularly harmful to women. The United Nations Population Fund (UNFPA) has noted that the COVID-19 pandemic has the potential to increase the prevalence of these practices, resulting from the lack of in-person school and extra-curricular activities, economic hardships, and lack of access/funding for health programs. They also state that while legislation and guidelines are helpful, changing social norms is the key to achieving gender equality and eliminating these harmful practices.¹⁰

The Demographic and Health Surveys (DHS) Program under the US Agency for International Development (USAID) conducts surveys and analyzes data on health, HIV, and nutrition in countries worldwide.¹¹ Based on their estimates, as of 2014, an estimated 225 million women in developing regions had an unmet need for modern contraception.¹² This unmet need is defined per the DHS to include woman of reproductive age (15-49 years old) who are: (1) married or unmarried and sexually active, (2) not using any method of contraception, either modern or traditional, (3) fecund (fertile), or (4) those who do not want to have a child (or another child) in the next two years or at all.^{11,12}

The overarching goal of sexual education should be to present sexuality and relationships as a natural and healthy part of life, and to reduce negative outcomes such as unwanted/unintended pregnancy, sexually transmitted infections, or abuse, in addition to ensuring that people have the knowledge to make healthy sexual decisions. There are many organizations focused on fighting gender inequality, harmful sexual practices, and encouraging sexual education for youth. Learning how to communicate this vital information in a culturally sensitive manner is important for healthcare providers to be able to move forward.

Case and Questions (part 1)

You are part of a medical mission trip to Jaipur, India. A multigenerational family visits your health clinic where you are providing health education. The family consists of GM (the grandmother, 50 years old), MM (the mother, 34 years old), and two daughters (DM and EM, 18 and 16 years old). MM has an obstetric history of G9-P7-A2. During your session, she mentions that she no longer wants any more children. Upon further discussion, you learn that the patient does not currently use any form of contraception, and she mentions that her family is traditionally against using contraceptives for religious reasons.

1. How would you plan to educate MM on contraceptive options, including any relevant pharmacologic and non-pharmacologic options?
2. How would you better your own understanding about the patient and her family's belief systems regarding contraception?
3. How would you use culturally-appropriate methods to communicate with the patient?

Case and Questions (part 2)

After discussing contraceptive options, DM shares that she has also encountered issues with her menstrual cycle. She expresses frustration at the limitations she experiences when she is on her period. Her mother does not let her enter the kitchen for fear of bringing bad luck. Additionally, EM shares that she does not have a consistent supply of hygiene products. She asks if the clinic can provide any sanitary pads.

4. What are some resources you can use to help EM access menstrual hygiene products?
5. What are some cultural beliefs and practices that exist regarding menstrual cycles in different cultures?

Case and Questions (part 3)

You take the time to address both DM and EM's questions about sex education and her menstrual needs. In the middle of your discussion, GM, the grandmother cuts you off and begins to accuse you of "westernizing her grandchildren." She states that sex education will only push them to be sexually active before the time is right. Since she does not speak English, your interpreter, a local resident, quickly steps in to translate.

6. What methods can you use to prepare your interpreter to act as a bridge for effective communication as you quickly respond to this question? How will you prepare for the session with the translator?
7. Describe ways you can respectfully respond to GM's concerns, simultaneously showing respect for the patient's family culture while sharing evidence-based sex education.

Author Commentary

Sex education is crucial as it allow individuals to knowledgeably care for themselves and make decisions about their healthcare. Pharmacists have a powerful opportunity to combine medication knowledge with communication tools to open an avenue for quality communication that meets the support and resource needs of menstruating individuals. Intercultural patient care can be fraught with miscommunication pitfalls. But a respectful and curious attitude can help healthcare providers create a safe and open space for honest discussion. Additionally, taking the time to understand cultural and religious beliefs can help providers understand why patients have certain beliefs about menstruation and sex education.

Healthcare providers have a unique opportunity to address systemic issues of inadequate sex education. They are also given the ability to speak to beliefs that are not based on fact. Gently correcting myths or adding factual background to existing beliefs can empower women to fully manage their personal health. This type of education can help address larger issues related to inequity in healthcare decision making, sexual based mistreatment, and a lack of access to menstrual hygiene products.

Patient Approaches and Opportunities

Communication across cultures can be challenging to navigate. Discussion of subjects that may be considered sensitive or even taboo can create tension early in the conversation. Care must be taken to communicate clearly. Unfortunately, certain societies' cultural and social norms have restricted essential education in subjects like sex, feminine hygiene, and reproduction. Individuals living with these societal norms often believe that sex education may lead younger generations to be promiscuous. However, the opposite is more often true.⁵ When young people are educated about sexuality in a healthy way and understand safe sexual practices, they are less likely to get that information from friends or inaccurate sources.

Pharmacists have a unique ability to address the challenges stated above because they are often accessible to people even in rural areas. Counseling patients on their medications can often open the door to crucial conversations about taboo medical subjects. Incorporating culturally sensitive tools of communication can create a high level of impact and improve the dialogue between the pharmacist and patient. Patients will be able to find a safe and open environment to address medication related questions but also extremely important sex education queries. Pharmacists have a pivotal role in global health and patient communication. Using pharmacist-specific communication skills may be the answer to the disparities seen in sex education globally.

Important Resources

Related chapters of interest:

- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Ethical decision-making in global health: when cultures clash](#)
- [Hormonal contraception: from emergency coverage to long-term therapy](#)
- [From belly to baby: preparing for a healthy pregnancy](#)
- [Digging deeper: improving health communication with patients](#)
- [Uncrossed wires: working with non-English speaking patient populations](#)

External resources:

- Websites:
 - World Health Organization. Sexual and Reproductive Health and research (SRH), including the Human Reproduction Programme (HRP). <https://www.who.int/teams/sexual-and-reproductive-health-and-research>
 - UN Women. <https://www.unwomen.org/en>
 - UN Population Fund. International Technical and Programmatic Guidance on Out-of-School Comprehensive Sexuality Education (CSE). <https://www.unfpa.org/featured-publication/international-technical-and-programmatic-guidance-out-school-comprehensive>
 - World Health Organization. 2016 WHO medical eligibility criteria for contraceptive use. <https://www.fhi360.org/sites/default/files/media/documents/resource-chart-medical-eligibility-contraceptives-english.pdf>
- Journal articles:
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Glossary and Abbreviations

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1.29: Harm reduction for people who use drugs- A life-saving opportunity

Learning Objectives

At the end of this case, students will be able to:

- Summarize how harm reduction improves the health of individuals and the community
- Identify best practices related to use of supportive language, provision of supplies for safer drug use, and connection to local harm reduction organizations
- Counsel a patient on harm reduction strategies and appropriate resources

Introduction

As defined by the Harm Reduction Coalition[®], harm reduction is “a set of practical strategies and ideas aimed at reducing negative consequences associated with drug use.”¹ Harm reduction is a core component of the treatment model of substance use disorders (SUD), especially during ongoing substance use or when individuals do not identify abstinence as a primary goal. The most common misconception is that harm reduction is synonymous with promoting drug use.¹ Contrarily, harm reduction recognizes that substance use can be associated with significant harm, yet also recognizes that substance use has long been, and will continue to be, part of our world.¹ Instead, harm reduction represents a person-centered alternative to punitive and prohibitionist measures which lead to adverse health outcomes and social isolation.¹ While this ideology may sound like a novel concept, harm reduction strategies are utilized in many other areas of our lives such as seatbelts for cars, condoms for sex, and, most recently, face masks for COVID-19, for example. These interventions aim to reduce negative consequences associated with activities that impose some level of risk, such as driving a car, engaging in sex, or gathering with others during a viral pandemic. Though harm reduction in the context of substance use commonly targets people who inject drugs, people who use drugs via other routes can also benefit from harm reduction interventions.

Harm reduction for people who use drugs (PWUD) applies to a range of services personalized to the individual, substance(s) used, route(s) of use, and other risk factors.² These services are centered around overdose prevention, infection prevention, and social justice for PWUD in order to decrease morbidity and mortality.² Harm reduction interventions that decrease risk of overdose and death include strategies such as fentanyl test strips, administration of small initial test doses, using in the presence of others who are prepared to administer naloxone, taking turns and staggering use by at least 30 minutes, avoiding concomitant use of multiple central nervous system depressants, and using via a less dangerous route (e.g., intranasal rather than intravenous).² Harm reduction interventions to decrease risk of infectious diseases may include access to sterile syringes and other equipment, education to avoid reusing or sharing syringes, safer injection technique including location and step-by-step guide, administration of indicated vaccinations, HIV pre-exposure prophylaxis (PrEP) or post-exposure prophylaxis (PEP), and provision of wound care.² Access to methadone and buprenorphine for alleviation of withdrawal and treatment of underlying opioid use disorder (OUD) has also been associated with reduced overdose and mortality risk, even when use of the medication is non-prescribed.³⁻⁶ Use of these medications for treatment of OUD has also been shown to reduce risk for infectious disease.⁷⁻¹⁶ Legal, policy, and regulatory changes are also essential to facilitate these harm reduction interventions; examples include naloxone access laws, overdose Good Samaritan laws, and removal of paraphernalia laws that impede syringe access. Harm reduction efforts to facilitate social justice for PWUD may go further to include public education, use of non-stigmatizing language, restructuring of SUD treatment models, decriminalizing substance possession and use, and addressing racial, gender, and sexual orientation inequities in SUDs.

Implementing harm reduction into pharmacy practice is imperative as the opioid overdose crisis continues to worsen alongside other concerning substance use trends. Overdose deaths related to opioids have continued to rise steadily despite annual decreases in opioid prescribing, driven primarily by potent synthetic opioid adulterants in the illegal drug supply.¹⁷ Concerningly, polysubstance overdoses are also rising steeply with increased stimulant use, growing adulteration of the illegal benzodiazepine supply, and persistent concomitant use of alcohol.¹⁸⁻¹⁹ The science associating harm reduction efforts with a positive impact

on individual and public health is crystal clear. These interventions have been associated with higher uptake of SUD treatment, greater retention in care, fewer overdoses, safer injection practices, and greater viral suppression of transmittable diseases such as HIV and HCV.²⁰ Additionally, harm reduction is cost-effective, as it is estimated that syringe services programs cost \$23 to \$71 per person per year which are minimal when compared to the alternative medical costs of treating substance use and injection-related complications in addition to new HIV and HCV cases.²¹ Lastly, harm reduction services are not associated with increased substance use, riskier substance use behavior, or increased crime in areas densely populated with harm reduction services.²²⁻²⁴

Case

Scenario 1.29.1

You are a pharmacy student on a community pharmacy advanced pharmacy practice experience (APPE) in a state where non-prescription syringe sales are legal.

CC: "I'd like to buy naloxone and a pack of syringes, please."

Patient: The patient appears to be a non-Hispanic white male in their mid-20s. They use a wheelchair.

Interaction: You overhear a dialogue between the patient and one of the technicians at the pharmacy counter.

- **Technician:** "Do you have a prescription for those?"
- **Patient:** "No. I need 28 gauge, ½ inch, ½ mL, please."
- **Technician:** "Well, what are the syringes for?"
- **Patient:** "Um, my grandmother. She has diabetes."
- **Technician:** "Well, then she should have a prescription."
- **Patient:** "Okay, well I do not have a prescription."
- **Technician:** "And why do you need naloxone? That is for junkies."
- **Patient:** "The naloxone is for a friend. Can I please just get these items? I can pay for them; they both really need them."
- **Technician:** "No, I know what's going on here. I am not selling you syringes to get high. You need to get clean."

Case Questions

1. What stigmatizing words were used in this interaction and how are these words harmful? What are their preferred alternatives?
2. The patient appears distressed and begins to walk away from the pharmacy counter. You want to re-engage them in conversation and see how you can help. You approach them and offer to grab the intranasal naloxone and a pack of the syringes. You direct them to wait in the private consultation area while you grab the items. How would you establish rapport with this patient following their mistreatment by a member of the pharmacy staff?
3. How would you counsel this patient on opioid overdose recognition and response, including proper use of intranasal naloxone?
4. Now that you have re-engaged this patient and have openly discussed intranasal naloxone, you learn that they have only starting injecting substances within the past three months, but they share that they often reuse syringes which has led to irritation and infection in the past. At this point, how can you incorporate other harm reduction strategies into your conversation?
5. What types of harm reduction services might you be able to offer this patient today?
6. During your conversation, the patient expresses concern that they shared syringes with someone yesterday who may be HIV positive, but they are not sure and does not have a way of contacting this person. They are nervous, scared, and do not know what to do. How do you navigate this conversation?

Author Commentary

In community settings, pharmacists are rarely aware that they are interacting with a person who is using illegal or illegally-obtained drugs. If they are aware, that is often because they have identified a forged prescription or some other issue that is likely to lead to confrontation. Thus, a non-prescription syringe purchase presents a unique opportunity to engage with a person who

may be at risk for harm related to illegal drug use without confrontation. A person who has progressed to injecting illegal drugs is unlikely to be in control of their drug use. The neurological changes associated with SUD are triggering a cycle of addiction that is not going to be interrupted by a pharmacist refusing to sell syringes. In the absence of sterile injection equipment, this patient will almost certainly reuse or share syringes. Additionally, carrying naloxone is encouraged not only for individuals who may be at risk of experiencing overdose, but also for individuals who may be likely to witness an overdose and thus be able to save a life. While a debate about whether pharmacists should sell syringes to someone they suspect of illegal drug use may be interesting in the context of an ethics class, the appropriate response is to sell the syringes. Pharmacists who refuse to do so, and institutions which establish policies that seek to prevent pharmacists from doing so, are acting in a manner that undermines public health. Furthermore, for pharmacists to truly provide a non-judgmental space to offer care for their patients, particularly related to harm reduction, it is very useful to reflect on their own experiences and exposure to narratives about substance use that may hinder their ability to be objective and offer patient care with compassion.

Imagine you are a person who injects heroin. Your family and friends want you to quit, you think about quitting often, and you have even been to inpatient treatment facilities a few times but always started using again eventually. You have been injecting for a few months using syringes given to you by a friend who obtained them from a syringe services program. You do not share, but you have been reusing and it is starting to hurt more when you inject. You decide to purchase some new syringes from the local pharmacy. You are anxious as you approach the counter. What if the pharmacist confronts you and asks why you need the syringes? What if they ask to see your arms to check for track marks? What if they loudly tell you to leave the store and talk about you later with other staff? As a pharmacist, what happens for this patient is up to you. Will you confirm their worst fears and risk discouraging them from ever purchasing sterile syringes from a pharmacy again, or will you embrace a harm reduction approach that protects their health? It is urged to choose the latter.

Patient Approaches and Opportunities

Pharmacists should recognize situations where naloxone should be offered and should utilize such opportunities to offer naloxone in a non-confrontational manner. In clinical practice, pharmacists may encounter less dramatic versions of this scenario where a patient asks for syringes, but does not request naloxone, despite your clinical intuition that they may benefit from it. In these types of scenarios, naloxone can be offered in a non-confrontational manner that does not make it about that person, such as informing them that this is an offering provided to all. This allows the patient to engage without the feeling that they may be implicitly admitting that their syringe purchase puts them at risk for an overdose. If the interaction goes well, and especially if the patient accepts the naloxone, it is helpful to close on a friendly note by inviting them to come back for a refill when needed, or if more questions arise. This will make the patient feel more comfortable returning and gives them some assurance when they can come in without fear of encountering a confrontational pharmacist.

Let the technicians and interns in your work environments know that you are comfortable selling syringes to anyone without a prescription or unnecessary hassle. Surveys indicate these individuals will typically follow the guidance of their supervisors on this topic. However, in the absence of guidance, they are likely to make the more conservative choice not to sell syringes to avoid reprimand. In addition to modeling supportive behaviors toward people who use drugs and enforcing a non-judgmental attitude among all staff, consider going further to educate colleagues by sharing resources designed to decrease stigma.²⁴

Important Resources

Related chapters of interest:

- [Safe opioid use in the community setting: reverse the curse?](#)
- [Smoke in mirrors: the continuing problem of tobacco use](#)
- [A stigma that undermines care: opioid use disorder and treatment considerations](#)
- [PrEPare yourself: let's talk about sex](#)
- [Alcohol use disorder: beyond prohibition](#)
- [Expanding the pharmacists' role: assessing mental health and suicide](#)
- [Unintended consequences of e-cigarette use: a public health epidemic](#)

External resources:

- IDU-related harm reduction and social justice action
 - National Harm Reduction Coalition. <https://harmreduction.org/issues/safer-drug-use/injection-safety-manual/>
 - Drug Policy Alliance. <https://drugpolicy.org>

- Naloxone training
 - Narcan[®]. <https://www.narcan.com/patients/how-to-use-narcan>
 - Evzio[®]. <https://evzio.com/>
- Non-stigmatizing language
 - NIDA. <https://www.drugabuse.gov/nidamed-medical-health-professionals/health-professions-education/words-matter-terms-to-use-avoid-when-talking-about-addiction>
 - The University of Texas at Austin Dell Medical School. Reducing Stigma Education Tools (ReSET). <https://www.ResetStigma.org>
- SUD treatment
 - Crotty K, Freedman KI, Kampman KM. Executive summary of the focused update of the ASAM national practice guideline for the treatment of opioid use disorder. *J Addict Med* 2020;14:99-112.
 - American Psychiatric Association. Practice guideline for the pharmacological treatment of patients with alcohol use disorder. 2018. <https://psychiatryonline.org/doi/book/10.1176/appi.books.9781615371969>
 - Substance Abuse and Mental Health Services Administration and National Institute on Alcohol Abuse and Alcoholism. Medication for the treatment of alcohol use disorder: a brief guide. HHS Publication No. (SMA) 15-4907. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.
- Finding MOUD providers and programs
 - Substance Abuse and Mental Health Services Administration. <https://www.samhsa.gov/medication-assisted-treatment/find-treatment>
- Finding syringe services laws by state
 - The Policy Surveillance Program. <http://lawatlas.org/datasets/syringe-services-programs-laws>
- Locating the nearest syringe services program
 - North American Syringe Exchange Network. <https://nasen.org/map/>
- Harm reduction for pharmacists
 - College of Psychiatric and Neurologic Pharmacists. <https://cpnp.org/guideline/harmreduction>
- Smokable drug use harm reduction
 - Canadian Institute for Substance Use Research. <https://www.heretohelp.bc.ca/sites/default/files/safer-smoking-crack-and-crystal-meth-2020.pdf>
- Alcohol consumption harm reduction
 - University of Washington, Harm Reduction Research and Treatment Center. <https://depts.washington.edu/harrtlab/wordpress/wp-content/uploads/2018/11/Safer-Use-Alcohol.pdf>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.30: Digging deeper- improving health communication with patients

Learning Objectives

At the end of this activity, students will be able to:

- Identify five theories and models that can be used to facilitate the patient-provider health communication process
- Describe opportunities to optimize communication with patients in healthcare settings
- Apply health communication theories within patient care, providing specific approaches and language to utilize

Introduction

Effective communication is a critical component of healthcare. At a broader scale, it can help disseminate important public health messages, such as frequent handwashing or consistently wearing masks, as seen during the COVID-19 pandemic. On an interpersonal level, effective communication helps healthcare professionals establish rapport with patients, increase patient understanding of their health, and encourage healthy behaviors. The communication that occurs between patients and healthcare professionals includes written, verbal, and nonverbal information and is impacted by health literacy. The prominence of health communication has been widely recognized and is included in the *Healthy People 2030* goals.¹ Overall, the ability to communicate effectively is essential to enhancing health and well-being.

The consequences of poor or inadequate health communication can impact patient care and health outcomes. When information is complex and difficult to understand, patients may become disengaged. For example, if a healthcare professional uses medical jargon to explain the mechanism of action of chemotherapy, patients may stop engaging because they do not understand the information presented. Patients may not always ask for clarification or may unknowingly misinterpret the information that was communicated. Additionally, when patients are not properly engaged, healthcare professionals may miss opportunities to learn about important health beliefs of the patient that are impactful to the patient's care but seldomly volunteered. For example, patients may have spiritual beliefs that influence the medications or other therapies they are willing to take/receive (i.e., gelatin in capsules, blood products), or they may prefer alternative methods to Western medicine. Further probing is often needed to have a complete picture of the patient's perceptions about their health, preferences on their care, spiritual beliefs that impact their care, and their health goals. Effective communication can also be used to empower patients to make lifestyle changes. These missed opportunities can result in incorrectly labeling patients who are resistant to adopting lifestyle changes and/or are non-adherent to their medications as "stubborn," "difficult," "forgetful," or "negligent." Communication is not a one-way interaction and should allow for shared decision making, patient-centered care, and patient empowerment.²⁻⁵

Health communication models and theories have been developed to improve communication among healthcare professionals, patients, and populations on micro and macro levels. These include, but are not limited to the Health Belief Model, motivational interviewing, the Transtheoretical Model, the Patient Explanatory Model, and the HOPE questions. A specific goal under *Healthy People 2030* (Health Communication objectives) is to "increase the proportion of adults who report their health care provider always asked them to describe how they will follow instructions."¹ This goal highlights the importance of ensuring patient understanding, and for providers to proactively confirm this understanding with patients. One of the recommended strategies is the teach-back method, which asks patients to describe how they will follow the instructions provided.⁶ Other *Healthy People 2030* Health Communication objectives include to "decrease the proportion of adults who report poor communication with their health care provider" and "increase the proportion of adults whose health care providers involved them in decisions as much as they wanted."¹ These two goals may require knowing and applying these health behavior theories and models to facilitate health communication in practice. These strategies or techniques enhance patient-professional interactions by engaging patients in their care.

Case

Scenario 1.30.1

You are a student pharmacist who works at the dispensary of a community-based health center.

CC: “I’m just here to pick up my meds.”

Patient: TS is a 68-year-old white female (64 in, 78 kg) who arrives at the dispensary today to pick up her medication for pain.

HPI: TS infrequently visits the dispensary to pick up her medications, with months long stretches between visits. You notice that the patient has two other medications on her profile, amlodipine, and Spiriva. The patient filled each of these prescriptions one time about four months ago. She is sometimes heaving or breathing heavily as she waits for her medications.

PMH:

- Osteoarthritis (diagnosed five years ago)
- COPD (diagnosed 10 years ago)
- HTN (diagnosed 15 years ago)

FH:

- Father: deceased (MI)
- Mother: deceased (lung cancer)
- Children: two daughters (44 years old and 38 years old); alive and well
- Grandchildren: four granddaughters and two grandsons

SH:

- Drinks 1-2 alcoholic beverages per weekend
- Smokes one pack of cigarettes per day (since 16 years old)
 - Typically purchases Newport brand cigarettes but prefers menthol cigarettes
 - Previously tried to quit smoking by using nicotine patches about four years ago but stopped after using them for a few days due to local itching
- Denies illicit drug use

Medications:

- Naproxen 220 mg BID prn pain
 - States this is the only medication that works for her
- Spiriva Respimat 2.5 mcg/actuation two inhalations once daily
- Amlodipine 5 mg daily

Immunizations:

- Td: three years ago
- MMR: six years ago

Allergies: NKDA

SDH: TS is widowed and has lived with one of her daughters since the loss of her husband 10 years ago. She completed high school and used to work in a factory. She is not working now but she cares for her young grandchildren several days a week. Her daughter provides her a weekly allowance, the majority of which she spends on a carton of cigarettes, which costs her about \$8 per pack.

Interaction: You observe the conversation the pharmacist is having with the patient as she is picking up her medications.

- **Pharmacist:** “Do you need refills for your other medications, amlodipine and Spiriva?”

- **TS:** “No thank you, I don’t take those medications because they don’t help me.”
- **Pharmacist:** “What do you mean they don’t help you?”
- **TS:** “I just mean that I’m able to manage without the meds. Besides, I feel fine so why would I take anything that might make me feel worse?”
- **Pharmacist:** “You were prescribed these medications by your doctor for a reason.”
- **TS:** “Yeah, my doctor gave me an inhaler too, because I smoke, but I’m not planning to quit smoking, so I don’t need that either. They also said something about getting the pneumonia shot. Why would I get that? I have never gotten pneumonia and pneumonia is pretty much harmless anyways. I don’t want to put any chemicals in my body that I don’t need to. God made us without those chemicals in our bodies for a reason.”
- **Pharmacist:** “Alright, so you don’t want to quit smoking?”
- **TS:** “No way. I mean at one point I did, but I’ve been smoking for a long time, and I’ve been fine so far. My mom used to smoke too. I remember she would always have a cigarette in her hand as she cooked dinner. I guess she ended up getting lung cancer but that doesn’t happen to everyone. My friend’s been smoking for longer than I have, and she is healthier than me! I will tell you one thing; those companies sure charge a lot for a pack of smokes. They get you hooked, and they drain your money.”
- **Pharmacist:** “Okay. Do you take the amlodipine?”
- **TS:** “Not really, they also told me I’ve got high blood pressure, but I don’t see how that’s a problem. I mean I don’t feel anything. I figure, I’m 68 years old, what can happen to me now? If I can just relax and stay at home, my blood pressure will be fine. It’s just the stress and being busy with the little ones that gets my pressure up. I bet if they checked my blood pressure when I don’t have the little ones running around it’d be fine. But I wouldn’t change it for the world, my grandkids are my pride and joy.”
- **Pharmacist:** “Okay that’s your choice... Let us know when you’re interested in quitting. Thank you for stopping by and have a great day.”
- **TS:** “Sure. See you next time.”

Case Questions

1. Identify which of the health communication models or theories is most appropriate to use to answer each of the following questions (listed in **Table 1**):

According to TS, what did she think her health problem was? What did she think caused her health problem? How can this impact her willingness to take her medications?

2. How susceptible did TS feel she was for the consequences of smoking and pneumonia? How severe did she think the consequences of smoking and pneumonia are? How does this impact the patient’s willingness to quit smoking and get the pneumococcal vaccine?
3. What is TS’s stage of change? What is an example of an appropriate way to approach patients at this stage of change?
4. What are some ways that the pharmacist could have used motivational interviewing when TS expressed resistance to smoking cessation?
5. What are ways to ask about TS’s spiritual beliefs and engage these beliefs as a source of motivation to take her medications, quit smoking and become vaccinated?
6. What are ways that you could leverage social support to cue TS to action?
7. What are some ways to increase TS’s self-efficacy for getting her HTN under control and quitting smoking?

Author Commentary

Pharmacists often focus on optimizing drug therapy instead of patient behavioral change. Additionally, pharmacists may overlook the patient’s perceptions of disease, susceptibility, and optimal treatment. This contributes to missed opportunities to motivate patients to make the necessary changes to improve their health and to assumptions healthcare providers make regarding patients’ health beliefs. For example, it has been reported that only 26.6% of adults reported that a healthcare provider utilized the teach-back method with them.¹ Patients who do not understand health information are known to be less likely to get preventative healthcare and more likely to have health problems.¹ Also, only 52.8% of adults reported their healthcare providers always involved them in decisions about their healthcare as much as they wanted.¹ Patients want to engage in decision-making about their health, so it is important that pharmacists attempt to engage patients using communication techniques as often as possible to improve relationships and ultimately the health of patients.¹

Beyond communicating with patients directly at the individual level, pharmacists can also impact health communication on the macro level. This includes collaboration with other healthcare providers. Having effective communication is essential for enhancing collaboration and closing the health disparities gaps that often exist due to the social determinants of health among underserved patient populations. However, behavior change cannot be sustained without recognizing the different levels of influence that impact health communication. Unfortunately, health communication alone cannot repair insufficient access to health care or unhealthy living environments. To close the gaps that cause health disparities, pharmacists should seek expansive ways to utilize health communication strategies and develop interventions that have multi-level influences.⁷ Ultimately pharmacists are integral members of high-performing health care teams. Effective communication and collaboration among health care professionals and across multiple levels will help meet the goals and objectives of *Healthy People 2030*.

Patient Approaches and Opportunities

Effective health communication includes patient-centered care which emphasizes the inclusion of the patient in decision-making regarding treatment. Shared decision-making allows for a discussion about the evidence for various treatment strategies and may lead to enhanced provider-patient relationships. One model of shared decision-making described by Elwyn and colleagues,⁵ utilizes patient deliberation and emphasizes respect for patients' choices and as individuals. We must tailor the therapy to individuals.

Pharmacists can motivate patients to adopt healthy behaviors by utilizing effective communication methods. Pharmacists can also assure appropriate understanding by taking the time to assess patients' beliefs regarding their health. Patient-provider interactions should always involve a bidirectional transfer of information. **Table 1** includes five theories and models that can be used in practice to improve health communication, which is necessary to establish constructive patient-pharmacist relationships.

Table 1: Health Communication Theories and Models

Theory/Model	Application	Examples
Health Belief Model:⁸ A theoretical model that is used to explain and predict changes in health behaviors. The key factors that influence health behaviors include: Perceived susceptibility Perceived severity Perceived benefits of action Perceived barriers to action Cues to action Self-efficacy	Conduct a health needs assessment to determine who is at risk and the population that should be targeted Convey the consequences of the health issues and risk behaviors Explain how, where, and when to take action and what the potential positive results will be Offer reassurance, incentives, and assistance; correct misinformation Provide "how to" information, promote awareness, employ reminder systems Provide training and guidance in performing action; use progressive goal setting	What is the likelihood or susceptibility of getting infected with the flu? How severe is a flu infection among this patient population? What are the potential benefits for giving pharmacists "provider status"? What are the barriers for achieving this legislative milestone for the pharmacy profession? What is the level of self-efficacy among pharmacists to assume provider status? What is the role of internal and external stakeholders in this initiative for cues to action? How does the media perceive the role of pharmacists in public health?

Theory/Model	Application	Examples
Motivational Interviewing:⁹ A technique that centers on patients' ability to exercise free choice and change in a process of self-actualization. The five principles include: R: Roll with resistance E: Express empathy D: Develop discrepancy S: Support self-efficacy	R: Avoid argument and direct confrontation. Adjust to patient's resistance rather than opposing it directly E: Exercise reflective listening D: Develop discrepancy between patient's goals or values and their current behavior S: Actively listen for patient's strengths and values and reflect these back in an affirming manner	Open-ended questions: <i>Start questions with "what", "when", "how" instead of "do"</i> Affirming: <i>"Sounds like this is challenging. No wonder you feel overwhelmed."</i> Reflective listening: <i>"What I hear you say is..."</i> Summarizing: <i>Recap what the patient said</i>
The Transtheoretical Model (Stages of Change):¹⁰ A model of intentional change that assumes that people change behavior through a continuous, cyclical process. The six stages of change include: Precontemplation: Patients do not intend to take action within the next 6 months Contemplation: Patients are intending to start the healthy behavior within the next 6 months Preparation: Patients are ready to take action in the next 30 days Action: Patients have recently started changing their behavior (within the past 6 months) Maintenance: Patients have sustained their behavior changes for more than 6 months Termination: Patients have no desire to return to their unhealthy behavior	Raise patient's awareness of the problem and the possibility of change without giving prescriptive advice Address ambivalence and discuss reasons and benefits for change and the consequences of inaction Help identify the best actions to take for change and support motivation Help implement a change strategy and identify available sources of support Identify triggers and develop coping strategies to prevent relapse	Patient may deny there is a problem and see no need for change. Minimization, blaming, and resistance are likely present Patient may acknowledge that a problem exists and considers change, but also rejects it. Patient has decided to change and wants to do something about the problem Patient takes steps to change and engages in specific actions to bring about change Patient actively works on sustaining the changes made. The challenge is to prevent relapse

Theory/Model	Application	Examples
Patient Explanatory Model:¹¹ Theory that individuals and groups can have vastly different notions about health and disease. Assesses patients' health beliefs and explanation of illness.	The eight questions include: <i>What do you call the problem?</i> <i>What do you think has caused the problem?</i> <i>What do you think the sickness does? How does it work?</i> <i>How severe is the sickness? Will it have a short course?</i> <i>What kind of treatment do you think the patient should receive?</i> <i>What are the chief problems the sickness has caused?</i> <i>What do you fear most about the sickness?</i> <i>What are the most important results you hope to get from treatment?</i>	
HOPE Questions:¹² A teaching tool developed to help incorporate a spiritual assessment into a patient interview.	H: Source of hope, meaning, comfort, strength, connection O: Organized religion P: Personal spirituality and practices E: Effects on medical care and end-of-life issues	H: "What are your sources of hope, strength, comfort and peace?" O: "Are you part of a religious or spiritual community? Does it help you? How?" P: "Do you have personal spiritual beliefs that are independent of organized religion? What are they?" E: "Are there any specific practices or restrictions I should know about in providing your medical care?"

Important Resources

Related chapters of interest:

- [Communicating health information: hidden barriers and practical approaches](#)
- [Smoke in mirrors: the continuing problem of tobacco use](#)
- [Getting to the point: importance of immunizations for public health](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Uncrossed wires: working with non-English speaking patient populations](#)
- [Laying the foundation for public health priorities: Healthy People 2030](#)

External resources:

- Websites:
 - [Healthy People 2030. https://health.gov/healthypeople/objectives-and-data/browse-objectives/health-communication](#)
 - Centers for Disease Control and Prevention. Gateway to health communication. <https://www.cdc.gov/healthcommunication/>
 - Food and Drug Administration. Risk communication. <https://www.fda.gov/science-research/science-and-research-special-topics/risk-communication>

- Agency for Healthcare Research and Quality. The SHARE Approach – essential steps of shared decision making: quick reference guide. <https://www.ahrq.gov/health-literacy/professional-training/shared-decision/tools/resource-1.html>
- Agency for Healthcare Research and Quality. The SHARE Approach – a model for shared decision making. https://www.ahrq.gov/sites/default/files/publications/files/share-approach_factsheet.pdf
- Book chapters and journal articles:
 - Kahaleh AA, Youmans SL, Bresette JL, Truong HA. Health behavior theories and models: frameworks for health promotion and health education programs. In: Truong HA, Bresette JL, Sellers JA, eds. *The pharmacist in public health: education, applications, and opportunities*. American Pharmacists Association; 2010.
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12. Anandarajah G, Hight E. Spirituality and medical practice: using the HOPE questions as a practical tool for spiritual assessment. *Am Fam Physician* 2001;63(1):81-9.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.31: Equity for all- providing accessible healthcare for patients living with disabilities

Learning Objectives

At the end of this activity, students will be able to:

- Identify relevant resources to assist patients living with disabilities
- Recommend appropriate patient-specific resources to minimize barriers to health
- Identify strategies to enhance the healthcare experience of patients living with disabilities
- Describe the policies that currently exist to enhance care for patients living with disabilities

Introduction

According to the Americans with Disabilities Act Amendments Act (ADAAA), disability is defined as “an impairment that substantially limits one or more major life activities, a record of such an impairment, or being regarded as having such an impairment.”¹ The World Health Organization (WHO) and the International Classification of Functioning, Disability, and Health (ICF), which provides a framework for the measurement of functioning and disability, defines disability as an “umbrella term, covering impairments, activity limitations, and participation restrictions.”² Approximately 26% or 61 million adults in the United States currently live with a disability.³ For some patients, especially those with disabilities, obtaining access to healthcare services as well as communicating with healthcare professionals can be an extremely challenging experience. A lack of proper access to healthcare services and/or ineffective health communication may lead to poor patient understanding of their health and current/potential treatment options, low quality of life, and negative health-related outcomes.

The term “disability” encompasses diverse categories of impairments, activity limitations, and restrictions which includes visual impairment, hearing impairment, motor impairment, cognitive/learning impairment, and speech disabilities or difficulties. While each of these categories are defined differently by various agencies, generally recognized definitions/descriptions can be found within the Individuals with Disabilities Education Act (IDEA). According to IDEA, an individual has a visual impairment if they experience vision loss that cannot be corrected. Hearing impairments, on the other hand, can be permanent or fluctuating, with deafness specifically defined as having a severe form of impairment in the ability to process linguistic information through hearing. Motor impairment involves the partial or complete loss of function of a body part, while cognitive or learning impairment is defined as “a disorder in one or more psychological processes that are important for understanding and using language”. Finally, speech or language impairment is defined as a communication disorder and includes stuttering and voice impairment, for example.⁴ However, this is by no means a comprehensive list of all of the disabilities that individuals experience, and they may not always be readily apparent to others. Indeed, there are many individuals who have less obvious disabilities that are “hidden” or “invisible.” Finding one standard definition of a hidden/invisible disability is a challenge and finding resources for these patients can be more challenging. Consequently, there is much advocacy for people with this type of disability.

Regardless of the type, individuals with disabilities may encounter their own unique set of barriers that can hinder healthcare access. It is important to see each patient as an individual and tailor care to each person's specific preferences and needs. It is vital that healthcare professionals obtain the requisite education and knowledge to provide appropriate health services to individuals with disabilities. Improving healthcare professionals' competence and skills in providing care to and communicating with patients with disabilities will increase patients' knowledge of their health care and associated treatments,⁵ ensure safer medication use, and optimize patient health-related outcomes.⁶

Case

Scenario 1.31.1

You are a pharmacist in a federally qualified health center.

CC: “My wife is here for an appointment.”

Patient: MC is a 63-year-old female (64 in, 73 kg) who presents with her husband for an appointment. The patient is smiling and engaged but turns to her husband when you begin to ask questions. You see that the patient is communicating with her husband with sign language.

HPI: Per the medical record, MC was started on insulin about one month ago due to uncontrolled diabetes after about five years of oral medications. You notice that she has not started the insulin because she brings all her medications to the appointment and the insulin and supplies are not included.

PMH: T2DM, HTN, hypertlipidemia, allergic rhinitis

FH:

- Married with three adult children
- Father: deceased (age 72 from MI)
- Mother: alive; HTN, hypertlipidemia

SH:

- Denies ever having used tobacco
- Denies illicit drug use
- Husband is a current smoker (20 pack-year history)

Medications:

- Basaglar 10 units subcutaneously daily
- Metformin 1000 mg BID
- Glipizide 10 mg BID
- Lisinopril 40 mg daily
- Atorvastatin 40 mg daily
- Aspirin 81 mg daily
- Cetirizine 10 mg daily

Allergies: NKDA

Vitals:

- BP 128/79 mmHg
- HR 72 bpm
- RR 18/min
- Temp 98.6°F
- Pulse ox 97% on RA

Labs:

Parameter	Value	Parameter	Value
Na	138 mEq/L	Ca	9.7 mg/L
K	4.6 mEq/L	Mg	3.7 mg/L
Cl	105 mEq/L	HgbA1c	9.5%
SCr	0.9 mg/dL	Glu (random)	216 mg/dL
BUN	16 mg/dL		

Surgical history: N/A

SDH: The patient is currently uninsured. She works part-time and has a family income of approximately \$1800 per month.

Additional context: MC is deaf and communicates with her husband using sign language. The patient's husband says that they both need some help in accessing a new medication. After you develop some rapport with the couple, while trying to understand the challenges to medication access and working through some paperwork, the patient's husband states that he is unable to read.

Case Questions

1. What concepts or techniques can be used when communicating with MC to ensure her complete understanding?
2. How can you approach the topic of how the patient prefers to communicate?
3. What are some barriers to health that MC has?
4. What resources can you recommend to MC to help her navigate barriers to care?
5. What are strategies can you implement to improve MC's healthcare experience?
6. How can your healthcare organization improve the way that they provide care for patients with disabilities? What policies/laws exist to assist individuals with disabilities?

Author Commentary

The National Center for Health Statistics reports that approximately 37.6 million adults have some level of hearing loss/impairment.⁷ Hearing loss/impairments can present barriers to effective healthcare delivery by pharmacists. Research has shown that pharmacists may not be not fully prepared to understand or serve patients who are deaf or hard of hearing.⁶ Deaf/hard of hearing patients have reported being uncomfortable during interactions with pharmacists, along with fear, anxiety and mistrust toward the overall healthcare system.⁸ Pharmacists and student pharmacists can improve patient interactions with individuals who are deaf/hard of hearing by utilizing effective communication practices as a whole, like using direct eye contact and speaking to the patient as much as possible, not the caregiver or interpreter. Helpful resources like the guide on communicating with hard of hearing/deaf patients developed by Hearing Loss Association of America can inform pharmacists about things they should do when communicating with patients. Training that focuses on providing care to patients with hearing loss or impairment and other disabilities can and should be incorporated throughout the pharmacy curriculum.

Insufficient communication between pharmacists and deaf/hard of hearing patients will hinder the establishment of rapport.⁹ A strained pharmacist-patient relationship can lead to the widening of healthcare disparities and exacerbation of negative treatment outcomes or may result in lack of knowledge of important health issues and/or avoidance of care altogether.^{8,9} Therefore, reducing or eliminating the barriers to healthcare access for deaf/hard of hearing patients is crucial for successful and effective healthcare interactions.

Patient Approaches and Opportunities

To effectively care for a patient with a disability, it is imperative that the healthcare professional first ascertain the patient's preferred mode of communicating. Then, to the extent possible, the healthcare professional should honor the patient's request to communicate in that mode for the duration of the interaction. Patients may prefer to use pen and paper, lip read, visual demonstrations (when applicable), a communication app or other type of assistive technology to communicate. Hence, there are a variety of different modes of communication for patients with disabilities, and identifying and using the one that the patient prefers will help provide a more successful patient encounter. **Table 1** discusses additional barriers to health for patients with disabilities and strategies that can be used to enhance patient access. Some tips for developing effective health communication materials for patients include: (1) use plain language; (2) limit information to three to five key points; (3) be specific and concrete; (4) use visuals; (5) include a summary that repeats the key points; and (6) use positive, hopeful, and empowering language.

Table 1. Barriers to health and strategies to enhance access¹⁰⁻¹²

Category	Example barriers to health	Strategies to enhancing access
General recommendations	Difficulties with communicating with healthcare providers and personnel	Talk with persons with disabilities in the same way and with a normal tone of voice (not shouting) as you would talk with anyone else Take steps to ensure that effective communication strategies are used; this includes sitting or standing at eye level with the patient and making appropriate eye contact Talk to people with disabilities as adults <i>and</i> talk with them directly rather than to an accompanying person Ask the person with a disability if assistance is needed and do not assume that help is needed until you ask Use “people-first language”: refer to “a person with a disability” rather than “the disabled person” or “the disabled” Never pet or otherwise distract a canine companion or service animal unless the owner has given you explicit permission to do so
Visual impairment	Trouble or inability to read prescription labels Difficulties with accessing information or communication technology	Identify yourself when you approach a person who has low vision or blindness Introduce anyone with you to a person with vision loss Speak the person’s name or touch the person’s arm lightly when you speak so that s/he knows to whom you are speaking before you begin Face the person and speak directly to him/her; use a normal tone of voice (avoid shouting) Explain when you are leaving the environment Increase the visibility of prescription labels (e.g., font size 12, sans serif, bolded, avoiding glossy tape, highlighting key words) Provide ample space between words Use yellow paper with black ink for contrast Use blister packaging

Category	Example barriers to health	Strategies to enhancing access
Hearing impairment	Difficulties with communicating with healthcare providers and personnel Lack of interpreters available to facilitate communication	Ask the person who is hard of hearing, deaf, or deaf-blind how s/he prefers to communicate Eliminate or minimize background noise and distractions Use amplified communication devices, devices with volume control, TTY devices If you are speaking through a sign language interpreter, pause occasionally to allow the interpreter time to translate completely and accurately Talk directly to the person who is assisted by a sign language interpreter, not to the interpreter, even if the person is looking at the interpreter and does not make eye contact with you Before you start to speak, get the attention of the person you are addressing using visual (wave) or tactile signals (light touch) Speak without exaggerating your words and do not raise your voice, unless you are specifically requested to do so (do not shout)
Motor impairment	Difficulties with accessing transportation and navigating through physical environments Difficulties with opening pill bottles or packaging, using nonoral formulations, using testing supplies	Provide wheelchair-accessible pharmacy consultation areas Do not push or move a person's wheelchair or grab a person's arm to provide assistance without asking first Eliminate obstacles to the pharmacy register (e.g., promotional cardboard stands, stock boxes, stepladders) Sync medication fills to reduce number of trips to the pharmacy Dispense in easy-open caps, use larger vial sizes Use devices (e.g., spacers for inhalers, devices to help instill eye drops) When speaking to a person seated using a wheelchair/scooter, sit so that you and the person are at the same eye level

Category	Example barriers to health	Strategies to enhancing access
Cognitive/ learning impairment	Having a disability is often associated with stigma May require additional time to process questions and formulate responses May not recall long questions May have difficulties in requesting help or asking questions May have difficulties with explaining health conditions or locating pain Important medical information may be missed	Adjust your method of communication as necessary depending on the individual's responses to you Use simple, direct sentences or supplementary visual forms of communication, such as gestures, diagrams, or demonstrations, if indicated Avoid sensory overload by providing information gradually and clearly Use concrete, specific language and avoid abstract language and simplistic wording When possible, use words that relate to things you both can see Be prepared to repeat the same information more than once in different ways Give exact instructions. For example, "You will see the pharmacist at 10:30," rather than "Come back to see the pharmacist in 15 minutes" When asking questions, phrase them without suggesting desired or preferred responses as some people with intellectual, cognitive, or developmental disabilities may tell you what they think you want to hear Recognize that the person may need to have directions repeated and may take notes to help remember directions or the sequence of tasks; they may also benefit from watching a task demonstrated Use/discuss medication adherence tools (e.g., pillboxes, adherence packaging, calendars, phone alarms) Simplify medication regimen(s) when possible (e.g., once daily dosing, extended-release formulations) Review medication regimens to avoid polypharmacy Use pictograms when explaining directions Treat adults with intellectual, cognitive, or developmental disabilities as adults

Category	Example barriers to health	Strategies to enhancing access
Speech disabilities/difficulties	May have difficulties explaining health conditions/verbalizing concerns	Talk to people with speech disabilities as you would talk to anyone else; use your regular tone of voice (without shouting) Be patient because it may take the person extra time to communicate; do not speak for the person or complete the person's sentences Give the person your undivided attention and eliminate background noise and distractions Repeat what you understand and note the person's reactions, which can indicate if you have understood correctly Do not pretend to understand if you do not – tell the person you do not understand what s/he has said and ask the person to repeat the message, spell it, tell it in a different way, or write it down (use hand gestures and notes) To obtain information quickly, ask short questions that require brief answers or a head nod; avoid insulting the person's intelligence with oversimplification

Important Resources

Related chapters of interest:

- [Communicating health information: hidden barriers and practical approaches](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Let your pharmacist be your guide: navigating barriers to pharmaceutical access](#)
- [Expanding the pharmacists' role: assessing mental health and suicide](#)

External resources:

- Websites:
 - Center for Medicare and Medicaid Services. Improving access to care for people with disabilities. <https://www.cms.gov/About-CMS/Agency-Information/OMH/resource-center/hcps-and-researchers/Improving-Access-to-Care-for-People-with-Disabilities>
 - Centers for Disease Control and Prevention. Disability and health information for health care providers. <https://www.cdc.gov/ncbddd/disabilityandhealth/hcp.html>
 - Centers for Disease Control and Prevention. Disability and health resources for facilitating inclusion and overcoming barriers. <https://www.cdc.gov/ncbddd/disabilityandhealth/disability-resources.html>
 - Centers for Disease Control and Prevention. Disability and health emergency preparedness tools and resources. <https://www.cdc.gov/ncbddd/disabilityandhealth/emergency-tools.html>
 - National League for Nursing. Communicating with people with disabilities. <http://www.nln.org/professional-development-programs/teaching-resources/ace-d/additional-resources/communicating-with-people-with-disabilities>
 - *Healthy People 2020*. Disability and health. <https://www.healthypeople.gov/2020/topics-objectives/topic/disability-and-health>
 - United Nations Development Programme. Universal design in health care institutions manual. https://issuu.com/undp37/docs/manual_ud_in_healthcare_eng
 - The Center for Universal Design. Environments and products for all people. <https://projects.ncsu.edu/ncsu/design/cud/>
- Journal articles:
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 - University of Delaware Center for Disabilities Studies. Effective communication for health care providers: a guide to caring for people with disabilities. <http://www.cds.udel.edu/wp-content/uploads/2017/02/effective-communication.pdf>
 - Alliance for Disability in Health Care Education. Core competencies on disability for health care education. https://nisonger.osu.edu/wp-content/uploads/2019/08/post-consensus-Core-Competencies-on-Disability_8.5.19.pdf

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.32: Laying the foundation for public health priorities-Healthy People 2030

Learning Objectives

At the end of this case, students will be able to:

- Describe the Healthy People initiative and its role in setting public health priorities
- Discuss how *Healthy People 2020* has changed to *Healthy People 2030*
- Identify the leading health indicators and priority areas within *Healthy People 2030*
- Analyze current progress towards *Healthy People 2030* in specific areas, as well as opportunities and challenges for pharmacists

Introduction

Healthy People is a framework that provides direction regarding the nation's most pressing public health challenges. This health initiative, coordinated by the Office of Disease Prevention and Health Promotion within the United States Department of Health and Human Services, is a future-oriented approach to promote health and prevent disease. At the start of each decade, measurable objectives are released with the intent to work toward their achievement over the next 10 years. The most recent edition is *Healthy People 2030*.¹

Table 1 lists the vision, mission, foundational principles, and overarching goals of *Healthy People 2030*. While most of the overarching goals are similar to *Healthy People 2020*, there are two notable changes. This iteration maintains an emphasis on health equity and social determinants of health (SDH/SDOH), but for the first time, explicitly states attaining health literacy as an area of focus. Additionally, as there is growing recognition of factors outside of the healthcare system that influence health, a new overarching goal was added to collaborate across public, private, and not-for-profit sectors to improve health and well-being.¹

There are 355 measurable objectives included in *Healthy People 2030*; this represents a decrease from *Healthy People 2020*, which had over 1,000 objectives. The number of objectives were intentionally reduced to bring attention to the highest-priority public health issues, diminish overlap, and use higher data standards than in previous decades. There is an online crosswalk available that shows how objectives have changed from 2020 to 2030. Users of *Healthy People 2030* are encouraged to utilize the website to identify the needs and priority populations in their own communities and to take national data to set local targets for their programs. In this way, Healthy People helps guide the work of both public health and clinical health professionals.¹ Pharmacists have embraced their role in public health by providing services such as chronic disease management, counseling for smoking cessation, immunizations, emergency preparedness and response, and health education. Working with public health officials to solve health problems and using *Healthy People 2030* objectives to identify priority areas of intervention justifies the essential role that pharmacists play in public health and improving the health of our communities and nation.

Table 1. *Healthy People 2030* Framework ¹

Item	Description
Vision	A society in which all people can achieve their full potential for health and well-being across the lifespan
Mission	To promote, strengthen and evaluate the Nation's efforts to improve the health and well-being of all people

Item	Description
Foundational Principles	Health and well-being of all people and communities are essential to a thriving, equitable society Promoting health and well-being and preventing disease are linked efforts that encompass physical, mental, and social health dimensions Investing to achieve the full potential for health and well-being for all provides valuable benefits to society Achieving health and well-being requires eliminating health disparities, achieving health equity, and attaining health literacy. Healthy physical, social, and economic environments strengthen the potential to achieve health and well-being Promoting and achieving health and well-being nationwide is a shared responsibility that is distributed across the national, state, tribal, and community levels, including the public, private, and not-for-profit sectors Working to attain the full potential for health and well-being of the population is a component of decision-making and policy formulation across all sectors
Overarching Goals	Attain healthy, thriving lives and well-being, free of preventable disease, disability, injury, and premature death Eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all Create social, physical, and economic environments that promote attaining full potential for health and well-being for all Promote healthy development, healthy behaviors, and well-being across all life stages Engage leadership, key constituents, and the public across multiple sectors to take action and design policies that improve the health and well-being of all

Case and Questions

You have been asked to serve on a public health advisory committee at the local health department. The committee has been tasked to create a roadmap to achieve public health goals for the local community. Your committee has decided to use *Healthy People 2030* as a framework to understand the most pressing public health challenges. By using the findings from *Healthy People*, local health department activities will be more aligned with state and national public health priorities. You have also been asked to discuss the role of the pharmacist in helping to achieve *Healthy People* objective targets.

To begin your work, navigate to: <https://health.gov/healthypeople>. Review the “Home” and “About” tabs to become more familiar with *Healthy People 2030* and why this document is important.

Select one of the leading health indicators (across the life spans) listed below:

- Adults who receive a colorectal screening based on the most recent guidelines
- Adults with hypertension whose blood pressure is under control
- Cigarette smoking in adults
- New cases of diagnosed diabetes in the population
- Current use of any tobacco products among adolescents
- Maternal deaths
- Drug overdose deaths
- Persons who are vaccinated annually against seasonal flu
- Adolescents with major depressive episodes (MDE) who receive treatment
- Persons who know their HIV status

Click on the arrow next to “Objectives and Data.” Once in the drop-down menu you see two tabs: “Leading Health Indicators” and “Social Determinants of Health.” Work through these sections to complete the questions for your selected indicator.

1. What is the overall purpose of *Healthy People 2030*? Describe the purpose of the leading health indicators (LHIs). What is the focus of the indicators and what do they address?
2. Review the leading health indicator you selected, and health behaviors associated with the indicator. Click on the indicator highlighted in blue in this section. This will take you to an objective overview page. On the top of the page you will see the objective for your leading health indicator and status for this objective. Below the baseline status is a summary and topic (health behavior) the objective. What was the objective for your leading health indicator? What was the baseline for your leading health indicator objective? What is the target for 2030? In the “Data methodology and measurement” section on this page, what were the changes for this objective from *Healthy People 2020* to *Healthy People 2030*? Do you think these changes will impact the measurement of this objective? If so, how?
3. After reviewing the status of your leading health indicator objective and reading the summary, click on the topic (health behavior) in blue. Select 2-3 objectives from this page that you may be interested in and review. What is the current status of each of the objectives you selected? What is the target for 2030? Do you think we will be on target to achieve this objective(s)? Why or why not? What are the opportunities and challenges for pharmacists and student pharmacists in helping to achieve the objective targets?
4. Next go to the “Social Determinants” tab. What are the social determinants of health? Which determinants of health should be considered? How can pharmacists and student pharmacists help to address these determinants of health?
5. Why is it important for pharmacists and student pharmacists to use information from *Healthy People 2030* in the planning of public health programs and interventions?

Author Commentary

Pharmacists have had long-standing roles in public health activities, and Healthy People provides direction for the profession’s continued efforts.²⁻³ Pharmacists and student pharmacists can impact many of the objectives included in *Healthy People 2030* directly or as members of interdisciplinary teams. Although pharmacists have made significant contributions to public health, gaps in services exist in our communities. The pharmacists’ role in public health must be broadened and include collaboration with other public health professionals to improve access to care and health equity. Increasingly, pharmacists have been incorporated into a wide range of public health initiatives, including disease surveillance, community outreach, chronic disease management, emergency preparedness, and vaccinations. Additional roles that would support community health and the public health infrastructure include participating in community needs assessments and monitoring health outcomes. Other roles may also include program planning and evaluation, policy development and analysis, and health informatics. To be most effective in these expanded roles, it will be important that pharmacists in all practice settings have greater access to data from public health and healthcare health information exchanges and surveillance systems.⁴

Student pharmacists must receive adequate education and training to deliver a full range of public health interventions that address health problems and support patients in understanding and navigating an increasingly complex healthcare system. To that end, the Healthy People Curriculum Task Force (HPCTF), a group of representatives from eight health professional education associations, including the American Association of Colleges of Pharmacy, have created the Clinical Prevention and Population Health Curriculum Framework as guidance on topic areas to be included in health professions education to prepare students to impact population health.⁵

Patient Approaches and Opportunities

Even if not an “official” part of their job title or description, by the very nature of their work, pharmacists impact public health every day. Similarly, student pharmacists who intern in pharmacies, administer immunizations, or perform outreach activities focused on areas including patient screening and community education are also engaged in public health activities. These interventions at the individual or local level are termed the “micro” level of public health and roll up to big changes at the population, or “macro” level.^{2,3} The Healthy People objectives guide where these efforts should be focused to make the greatest impact. Additionally, the Healthy People website includes evidence-based resources that can be used or adapted when planning action on the topic areas.¹

Healthy People also has an emphasis on health equity, SDH/SDOH, and health literacy.¹ Health equity is key to ensuring that everyone has fair opportunity to attain their full health potential.⁶ SDH/SDOH are the non-medical factors that affect people’s

health, well-being, and quality of life. *Healthy People 2030* has an increased and overarching focus on social determinants of health as they are key to attaining better health and well-being. *Healthy People 2030* now defines and differentiates personal health literacy and organizational health literacy. It is important for pharmacists to not only assess patients' understanding and involve them in decision-making, but also to realize that pharmacies, pharmacy organizations, and healthcare systems have a responsibility to address health literacy.¹ Pharmacists' recognition and action on these areas are key to improving the nation's health.

Important Resources

Related chapters of interest:

- [Deciphering immunization codes: making evidence-based recommendations](#)
- [Getting to the point: importance of immunizations for public health](#)
- [Hormonal contraception: from emergency coverage to long-term therapy](#)
- [From belly to baby: preparing for a healthy pregnancy](#)
- [Unintended consequences of e-cigarette use: a public health epidemic](#)
- [Expanding the pharmacists' role: assessing mental health and suicide](#)
- [Alcohol use disorder: beyond prohibition](#)
- [A stigma that undermines care: opioid use disorder and treatment considerations](#)

External resources:

- Websites:
 - Centers for Disease Control and Prevention. How pharmacists can improve our nation's health. <https://www.cdc.gov/grand-rounds/pp/2014/20141021-pharmacist-role.html>
 - Association for Prevention Teaching and Research. Clinical prevention and population health curriculum framework. <https://www.teachpopulationhealth.org>
 - Haddock R. The expanding role of today's community pharmacists [blog]. <https://www.fdsrx.com/expanding-role-community-pharmacists>
 - Morrison CM, Glover D, Gilchrist SM, et al. Centers for Disease Control and Prevention. A program guide for public health. Partnering with pharmacists in the prevention and control of chronic diseases. <https://www.cdc.gov/grand-rounds/pp/2014/20141021-pdf-pharmacist-role-508.pdf>
- Journal articles:
 - Kelling SE, Rondon-Begazo A, DiPietro Mager NA, Murphy BL, Bright DR. Provision of clinical preventive services by community pharmacists. *Prev Chronic Dis* 2016;13:E149.
 - Rodis JL, Capesius TR, Rainey JT, Awad MH, Fox CH. Pharmacists in federally qualified health centers: models of care to improve chronic disease. *Prev Chronic Dis* 2019;16:E153.
 - Murphy BL, Rush MJ, Kier KL. Design and implementation of a pharmacist-directed preventive care program. *Am J Health-Sys Pharm* 2012;69(17):1513-8.
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5. Association for Prevention Teaching and Research. Clinical Prevention and Population
6. Health Curriculum Framework. <https://www.teachpopulationhealth.org/>. Accessed January 25, 2021.
7. World Health Organization. Health equity. <https://www.who.int/health-topics/social-determinants-of-health>. Accessed November 17, 2020.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.33: Staying on track- reducing missed immunization opportunities in the pediatric population

Learning Objectives

At the end of this case, students will be able to:

- Discuss the pharmacist's role in identifying pediatric patients who are not up-to-date with their immunizations
- Utilize the Centers for Disease Control and Prevention pediatric immunization and catch-up schedules to develop an immunization plan
- Identify common barriers to immunizations and develop effective strategies to overcome them
- Compare and contrast appropriate adult and pediatric immunization techniques including injection site selection, needle gauge and length, and ways to comfort the patient
- Review best practices to ensure continuity of care between the pharmacist and other members of the healthcare team

Introduction

Current immunization recommendations are published by the Centers for Disease Control and Prevention (CDC) based on recommendations from Advisory Committee on Immunization Practices (ACIP). Recommendations are based on several criteria including age, risk factors, and chronic diseases.¹ Pharmacists must be familiar with the immunization schedules as well as strategies for catching up on missed doses. The CDC's Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger identifies the vaccines routinely recommended by age and when catch-up immunizations are considered appropriate, should a dose be delayed. The catch-up schedule provides users with vaccine specific guidance on minimum intervals between doses, maximum ages for administration, and conditions under which additional doses may not be necessary.² The American Academy of Pediatrics (AAP) also publishes schedules and the CDC publishes best practices guidelines.^{3,4}

Despite the many opportunities to receive immunizations at primary care offices, pharmacies, health departments, and employer programs that exist, overall immunization rates remain below *Healthy People 2030* goals for most communities.⁵ Although pharmacists are trusted resources for provision of immunizations in adults, they have not traditionally had a large role in providing pediatric immunizations, with most given in a pediatrician's office. Across various pharmacy practice settings, a pharmacist could recognize a child as not up-to-date on immunizations, but due to scope of practice limitations, children either went unimmunized or relied on pharmacist referral, which constitute missed opportunities. Additionally, the decrease in childhood wellness visits as a result of the COVID-19 pandemic placed constraints on the usual opportunities for immunizations for pediatric patients.⁶

Before the COVID-19 pandemic, some states had already expanded pharmacist practice for pediatric immunizations as a solution to care access issues. In response to declining rates of pediatric immunizations and to reduce barriers to immunizations, the US Department of Health and Human Services issued a directive on August 19, 2020 (the Third Amendment to the declaration under the Public Readiness and Emergency Preparedness Act) to allow all pharmacists and supervised qualified pharmacy interns and technicians to administer any CDC approved immunization to individuals three to 18 years of age without a collaborative practice agreement or protocol.⁷ This effectively expanded ability for pharmacists in all 50 states to immunize pediatric patients. The amendment was subject to various requirements, including:

- Only using FDA-approved or emergency use authorized vaccines
- Ordering/administration according to CDC ACIP immunization schedules
- Compliance with jurisdictional recordkeeping and reporting requirements
- Informing patients/caregivers the importance of a well-child visit with a pediatrician
- Completion of at least 20 hours of practical training, current cardiopulmonary resuscitation certification and (for licensed pharmacists) a minimum of two hours of Accreditation Council for Pharmacy Education approved, immunization-related continuing pharmacy education during each state licensing period

Delays in immunizations can be tied to individual factors such as cost or vaccine hesitancy; however, others are more structural, including access to care, vaccine distribution, misinformation, or more recently, the COVID-19 global pandemic. With patients or

their caregivers, it is important to have discussions on why immunizations are not up-to-date to identify and reconcile any barriers as needed. From a public health perspective, increasing the access to care, such as allowing pharmacists to immunize children, or marketing campaigns directed at vaccine education, can help to fight barriers at a population level. Providing clinics at local schools, libraries, community centers, or other organizations that are centrally located and providing vaccines or education may be an effective strategy to reduce access barriers.^{7,8}

Case

Scenario 1.33.1

You are an ambulatory care pharmacist practicing in a family medicine clinic in a medically underserved area, serving patients in both your local community and surrounding rural areas.

CC: “My grandson hasn’t been able to get into his pediatrician in a while and I’m concerned that he is falling behind on his shots.”

Patient: AP is a 15-month-old (32 in, 10.9 kg) white male who is brought in to establish care as a new patient. His grandmother is his legal guardian and accompanies him today.

HPI: unremarkable

PMH: unremarkable

FH:

- Mother OUD
- Father (deceased) suicide; AUD
- Maternal grandmother T2DM

SH: Second-hand tobacco exposure (grandfather smokes 10 cigarettes per day)

Medications: None

Allergies: NKDA

Labs: unremarkable

ROS: unremarkable

SDH: AP lives with his grandparents (both in their 50s) and his four-year-old sister. He has medical and prescription coverage through the state Medicaid program. His grandfather works full-time for a utility company and his grandmother recently quit her retail job to care for the grandchildren. AP’s mother has weekly supervised custody visits.

Additional context: AP’s grandmother reports that while AP was scheduled for a 12-month-old well child visit with his previous provider, this appointment was canceled due to COVID-19. She does not have his immunization records but reports his last vaccines were received prior to her gaining custody two months ago. She is concerned about the costs for this visit as the family is on a fixed income and has spent much of their savings on legal fees related to custody of their grandchildren.

Case Questions

1. What are the long-term implications of missed childhood immunizations upon a community?
2. What role could the pharmacist in AP’s primary care setting play in bringing his immunizations up to date? What role might a pharmacist have in bringing immunizations up to date in the following practice settings: (1) community; (2) acute care; or (3) managed care?
3. What tools are available to healthcare professionals to determine a patient’s immunization record when the patient or caregiver is not able to provide one?
4. You manage to track down the following records from AP’s previous pediatric provider. Using the CDC Pediatric

Immunization catch-up schedule, which vaccines would you recommend for AP's visit today?

Vaccine	Age			
	1 Day	2 months	5 months	10 months
HepB	Dose #1	Dose #2	Dose #3	Dose #4
RV*		Dose #1	Dose #2	
DTaP		Dose #1	Dose #2	Dose #3
Hib*		Dose #1	Dose #2	Dose #3
PCV13		Dose #1	Dose #2	Dose #3
IPV		Dose #1	Dose #2	Dose #3
IIV/LAIV				
MMR				
VAR				
HepA				
*documentation is missing which product was given				

- AP requires multiple vaccines at today's visit. Explain how you will ensure that he will be brought up to date while avoiding unnecessary clinic visits.
- Referring to the CDC's Pink Book, how will you address each of the following special considerations for pediatric immunizations specific to AP: (1) education; (2) site selection; (3) needle length/gauge; and (4) comfort measures and after-care?
- What strategies would you suggest to address the cost barriers identified by AP's grandmother?
- What strategies could you consider if the following barriers were present: (1) safety/vaccine hesitancy; (2) transportation to the physician's office; or (3) lack of a PCP?
- How would you ensure the continuity of care between you and the other members of AP's healthcare team?

Author Commentary

Pharmacists are respected immunizers. Because many children missed vital doses in their recommended immunization schedules due to the COVID-19 pandemic, pharmacists were given expanded ability to immunize in the pediatric population age three and over in all 50 states. Therefore, it is the responsibility of the pharmacist or student pharmacist to stay current and to develop competency in pediatric immunizations through additional training or completing a continuing education program on pediatric immunizations.⁹

As regulations on obtaining childhood immunizations have loosened, patients require assistance to understand the importance of and pathway to catching up on missed immunizations. Oftentimes, patients present as part of a family to the pharmacy, and this is an opportunity to assess patients for missed doses. Depending on state regulations, pharmacists can also consider becoming a Vaccine For Children (VFC) program provider, which enables delivery of no-cost vaccines to children who are uninsured, under insured, Medicaid-eligible or American Indian or Alaska Native.¹⁰ Regardless of practice settings, pharmacists should be an active participant of the "immunization neighborhood" by sharing immunization records, making referrals, and providing information and professional advice to raise immunization rates. The COVID-19 pandemic and associated issues it has created an all-hands-on deck approach to care and children should be included in the pharmacist's approach to immunization completion where possible.^{9,11}

Patient Approaches and Opportunities

It is widely known that pharmacists are the most accessible healthcare professionals. With expanding pharmacist roles in pediatric immunizations, barriers such as vaccine hesitancy, transportation to the pediatrician, and access issues can be overcome. The CDC Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger and the catch-up

schedule are key resources in determining what immunizations a child requires and how to bring delayed immunizations up-to-date. The pharmacist ensures continuity of care by recording vaccinations administered in the pharmacy in the pharmacy's immunization system, and the state registries or Immunization Information Systems (IIS), and by communicating this information with the patient's healthcare team. Additionally the pharmacist should inform parents/caregivers on the importance of a well-child visit with their pediatrician or family medicine provider to assess growth and developmental milestones to ensure the optimal physical, mental, and social health of the child.

Important Resources

Related chapters of interest:

- [Communicating health information: hidden barriers and practical approaches](#)
- [Deciphering immunization codes: making evidence-based recommendations](#)
- [Getting to the point: importance of immunizations for public health](#)
- [Laying the foundation for public health priorities: Healthy People 2030](#)

External resources:

- Immunization Action Coalition. Clinic tools. <https://www.immunize.org/clinic/scheduling-vaccines.asp>
- Centers for Disease Control and Prevention. Pink Book. <https://www.cdc.gov/vaccines/pubs/pinkbook/vac-admin.html>
- Centers for Disease Control and Prevention. Pandemic guidance. <https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.34: When love hurts- caring for patients experiencing interpersonal violence

Learning Objectives

At the end of this case, students will be able to:

- Define intimate partner violence (IPV), elder abuse, and child abuse
- Estimate the prevalence of IPV, elder abuse, and child abuse in the United States
- Examine the impact IPV has on patients and its ramifications for patient care
- Identify methods to appropriately respond to IPV in a pharmacy setting

Introduction

Interpersonal violence is a prevalent health threat. Intimate partner violence (IPV; also called domestic violence), child abuse, and elder abuse are all forms of interpersonal violence. Because of unique positioning as the most accessible healthcare professionals, pharmacists have a tremendous opportunity, and in some states, a legal obligation, to intervene when they suspect that a patient is a victim of interpersonal violence or abuse.

The Centers for Disease Control and Prevention (CDC) defines IPV as a form of abuse including physical violence, sexual violence, stalking, and psychological aggression (including coercive tactics) by a current or former intimate partner.¹ Approximately 1 in 4 women and 1 in 10 men experience physical violence, sexual violence, and/or stalking by an intimate partner in their lifetime in the United States.² IPV has a serious impact on health, including physical injuries and exacerbation of chronic diseases. IPV victims experience anxiety, depression, sleep disturbances, and post-traumatic stress disorder.³⁻⁹ Pregnant victims are at increased risk for preterm delivery and miscarriage.⁹ Because of the multiple negative health impacts associated with IPV, victims access the healthcare system repeatedly. They are more often prescribed medications, including increased rates of potentially addictive medications, compared to women not experiencing IPV.¹⁰ Patients experiencing IPV have higher pharmacy costs and greater challenges with medication adherence.¹¹⁻¹⁴ Contraceptive sabotage and STI-related care-seeking are also more common in patients experiencing IPV.^{12,15,16} Pharmacy interactions provide an opportunity to intervene in the cycle of violence. Pharmacists, who are trusted members of the health care team and can be seen without appointments in many community settings, are ideally situated to assist victims.^{17,18}

Child maltreatment includes both abuse, which can be physical, emotional, or sexual, and neglect.¹⁹ Most states have specific definitions of child maltreatment. Child neglect is the failure to provide for a child's basic physical, medical, emotional, or educational needs, or failing to appropriately supervise a child.¹⁹ The CDC reports that at least 1 in 7 children experienced child abuse and/or neglect in the past year.²⁰ Child abuse can have a serious impact on health and increases the risk of future negative health outcomes.²⁰

Elder abuse can be physical, emotional, sexual, or financial, and includes neglect and abandonment. Elder abuse includes both intentional acts and the failure to act by a caregiver or another person in a relationship involving an expectation of trust that causes or creates serious harm to an older adult.²¹ In some states, elder abuse is included in statutes related to abuse of vulnerable individuals, which can include any adult with cognitive or other impairment that hinders their ability to make independent decisions. A US study estimated the one-year prevalence of elder abuse to be 10%.²² Victims of elder abuse are at increased risk of being placed in a nursing home, being hospitalized, and dying, even after adjusting for existing chronic disease.^{23,24}

Patients may disclose abuse or pharmacists may suspect a patient is experiencing abuse based on care interactions or medication patterns. Pharmacists must be prepared to care for these patients safely and appropriately, including using the CARD (Care, Assess for safety, Refer, Document) method when a patient discloses abuse.²⁵ Furthermore, it is imperative that pharmacists understand what, if any, their legal responsibilities are related to mandatory reporting in their practice setting. While

most states make clear that physicians are mandatory reporters, reporting requirements for pharmacists vary widely. A review of pharmacists reporting requirements indicated pharmacists were mandatory reporters of IPV in 10 states, of child abuse in 11, and of elder abuse in 20.²⁶ More states may include pharmacists as mandatory reporters as they may identify 'healthcare providers' as mandatory reporters, but do not specify which types of providers.²⁶ These requirements change over time, and it is important for pharmacists to keep current with reporting requirements.

Case

Scenario 1.34.1

You are a pharmacist working in a small community pharmacy in your state, which gives you the opportunity to serve the same patients year after year.

CC: "I had a tooth pulled at the dentist today and it'd be great if you could fill this as fast as possible."

Patient: LA is a 29-year-old female patient who is well known to you. She presents alone with a prescription for hydrocodone/acetaminophen (Norco).

PMH: Major depressive disorder

Medications:

- Sertraline 50 mg daily
- Ibuprofen PRN for pain

Interaction:

- **Pharmacist:** "Good morning LA, I will be happy to fill that for you. Just give me a few minutes to pull your profile up in our system."
- **LA:** (*appears nervous, looking over her shoulder*) "Thank you. I really need to hurry back home before my husband gets there for lunch. Will this take long?"

Additional context: LA makes minimal eye contact and appears rushed and nervous. You see in the patient's profile that she has no health insurance and a history of injury. You note that nine months ago she requested emergency contraception. She was in three months ago with a sprain to the wrist. She purchased a wrist brace at that time. Last month when she refilled her sertraline you noted that she had a black eye, but patient stated that she had fallen. As you prepare to counsel LA about the Norco and the potential interactions with OTC pain relievers, you notice some swelling and redness on her cheek, and she appears to be getting more upset with tears rimming her eyes. You ask her to join you in the counseling area to discuss the new prescription.

Case Questions

1. What might lead you to believe LA was exposed to IPV?
2. If this patient refuses to come to the counseling area with the excuse that she is in a hurry and she used Norco other times (so there is no need for counseling), what would you do?
3. If LA was accompanied by her husband, what would you do?
4. What questions would you ask LA once in the counseling area?
5. If the patient discloses that she has is experiencing IPV, what should you do?
6. Would you refer LA to other providers? If so, please give an example.
7. LA discloses that her husband hits, shoves, and threatens her regularly. She tells you that he hit her in the face with a shovel and that caused her to need to have her tooth removed. She told the dentist she had fallen on the shovel to cover up the abuse. Consider the state in which you practice. As a pharmacist are you required to report this incident?

Author Commentary

Interpersonal violence is a prevalent threat to the health and well-being of patients. Exposure to interpersonal violence impacts

pharmacy-related behavior and care. Pharmacists are well-positioned to serve as a referral resource for patients experiencing abuse given their accessibility in the community environment. Developing relationships with community agencies and other clinical providers who address violence and abuse are important steps pharmacists can take to be prepared to serve their patients who experience these issues. It is important to realize that victims stay in abusive situations for many reasons, including financial dependence, child custody concerns, and shame.²⁷

Pharmacists can also be proactive and provide violence-related education and screening initiatives. These efforts normalize discussing violence and can signal that there is no shame in being a victim of violence. Disclosure is rare, but experiencing violence is not. Shifting to a prevention approach can be helpful. Education and screening initiatives are an opportunity for prevention education. This can change the culture that violence is not 'deserved' or 'tolerated' and signals that there is support and resources available. Hang posters, display brochures/safety cards for related agencies, and wear pins indicating your support for victims. These steps signal to victims that you care and are available to discuss abuse with them.

Patient Approaches and Opportunities

Pharmacists can prepare to respond to patient disclosures by practicing the CARD method: respond with **C**are, **A**ssess for safety, **R**efers patients to local resources, and **D**ocument as appropriate for the practice setting. Pharmacists may have legal reporting requirements for interpersonal violence and should become aware of the requirements for their practice setting. Check your local requirements and resources for support on how to report interpersonal violence. In addition, pharmacists should identify local referral resources and prepare a practice protocol for abuse disclosures (examples available at the National Health Resource Center on Domestic Violence). The National Domestic Violence Hotline (1-800-799-SAFE[7233]) is a resource that can provide free, confidential help to victims 24 hours a day. Pharmacists can engage in prevention and education efforts by providing screening and educational materials and making patients aware that they are a safe and supportive healthcare provider with whom patients can discuss these issues.

Important Resources

Related chapters of interest:

- [Interprofessional collaboration: transforming public health through teamwork](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Expanding the pharmacists' role: assessing mental health and suicide](#)

External resources:

- Futures without Violence. <https://www.futureswithoutviolence.org/>
- The National Domestic Violence Hotline. <https://www.thehotline.org/>
- National Health Resource Center on Domestic Violence. <https://www.futureswithoutviolence.org/health/national-health-resource-center-on-domestic-violence/>
- National Resource Center on Domestic Violence. <https://www.nrcdv.org/>
- VAWnet. <https://vawnet.org/>
- IPV Health. <https://ipvhealth.org/>
- Centers for Disease Control and Prevention. Preventing intimate partner violence. <https://www.cdc.gov/violenceprevention/pdf/ipv-technicalpackages.pdf>
- Centers for Disease Control and Prevention. Intimate partner violence victimization assessment instruments. <https://www.cdc.gov/violenceprevention/pdf/ipv/ipvandscreening.pdf>
- Centers for Disease Control and Prevention. Intimate partner violence additional resources. <https://www.cdc.gov/violenceprevention/intimatepartnerviolence/resources.html>
- MedlinePlus. Domestic violence. <https://medlineplus.gov/domesticviolence.html>
- National Center on Elder Abuse. <https://ncea.acl.gov/>
- ElderCare Local Resource Locator. https://eldercare.acl.gov/public/resources/topic/Elder_Abuse.aspx
- UC-Irvine Center of Excellence on Elder Abuse and Neglect. <http://www.centeronelderabuse.org/resources.asp>
- Centers for Disease Control and Prevention. Elder abuse additional resources. <https://www.cdc.gov/violenceprevention/elderabuse/resources.html>
- ChildHelp. <https://www.childhelp.org/story-resource-center/child-abuse-education-prevention-resources/>
- Child Welfare Information Gateway. <https://www.childwelfare.gov>

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Glossary and Abbreviations

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- [Abbreviations](#)

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1.35: Pharmacists and Medicare Part D- helping patients navigate their prescription benefits

Learning Objectives

At the end of this case, students will be able to:

- Describe Medicare Part D and the role of the pharmacist in assisting beneficiaries
- Identify medications and immunizations covered by Medicare Part D
- Recall factors that may contribute to Medicare beneficiaries selecting non-optimal plans
- Identify resources and tools that pharmacists can utilize to help patients with plan selection

Introduction

Originally, individuals enrolled in Medicare did not have access to outpatient prescription coverage through the program. Seeing the need for coverage, Congress passed legislation for the inclusion of a drug benefit within the Medicare program, known as the Medicare Prescription Drug Improvement and Modernization Act of 2003.¹ As a result of this, outpatient prescription coverage, known as Medicare Part D, became available to beneficiaries in 2006.

Enrolling in Medicare Part D is voluntary and beneficiaries, who most often pay a monthly premium, can obtain their coverage through either stand-alone prescription or Medicare Advantage plans. Both options are provided by private companies that contract with the Centers for Medicare and Medicaid Services (CMS). The Medicare Part D plan must provide a minimum benefit based upon a standard benefit design, which has four distinct phases where beneficiaries pay different costs for their medications. In 2021, this standard benefit had a \$445 deductible, an initial coverage phase, a coverage gap (which begins when the full cost of the medication reaches \$4,130), and catastrophic coverage (starting when a beneficiary's out-of-pocket expenses for medications reach \$6,550).² Many enhanced plans exist in addition to the standard plans, and in 2021 beneficiaries had, on average, 60 different plans to choose from.³ Additionally, medications placed on different tiers on the plan's formulary may have different associated costs than others. Specific medications may be full cost or require a copayment or coinsurance depending on the plan structure, deductibles, and phase of coverage. This variation in cost can be confusing to beneficiaries and result in poor medication adherence. For example, patients may think their medication will always be expensive if they are currently in a deductible phase, not realizing that they may be liable for a lower cost once they enter the initial coverage phase.

Insurance plans contain costs and provide safety stops by utilizing coverage restrictions. These restrictions include quantity limits, step therapy, and prior authorizations. All Medicare Part D plans must cover at least two chemically distinct drugs in each drug category to ensure that people can obtain the drugs that they are prescribed, but plans can choose which specific drugs they will offer. However, CMS has identified six categories of drugs, commonly referred to as the "six protected classes" and requires Medicare Part D plans to cover "all or substantially all" of the drugs in those classes.⁴ In addition, there are several classes of drugs that Medicare Part D plans do not cover.⁵ Finally, in addition to drugs, Medicare Part D plans also cover all commercially available vaccines that are not covered under Part B.⁶

The variation among plans, the number of plans, and the changing medication costs across the phases of the benefit lead many beneficiaries to select sub-optimal plans. In a review of plan choices, it was found that beneficiaries spent more than they needed for coverage.⁷ Additionally, many do not switch plans despite changes to their benefits that could affect the coverage and cost of their medications.⁸ This may be a result of the complexity of the benefit and the tool designed to assist beneficiaries with finding the best coverage.⁹ Pharmacists are well-positioned to help with this complex process and provide guidance to beneficiaries.

Case

Scenario 1.35.1

You are a pharmacist in an ambulatory care clinic.

CC: “I’m having a hard time breathing and I don’t have an inhaler at home to use.”

Patient: JP is a 68-year-old male (72 in, 98.1 kg) who is a regular patient at your clinic for his COPD and diabetes care.

HPI: JP was diagnosed with COPD three years ago. He had a cold two weeks ago and his pulmonary symptoms have gradually worsened over that time. Today he is coughing and wheezing as he sits in the waiting room. His symptoms include shortness of breath, chest tightness and wheezing, and a persistent productive cough.

PMH: COPD (x 3 years); T2DM (x 6 years); HTN (x 10 years); major depressive disorder; osteoarthritis of the hands; shingles (single episode two years ago; has not received Shingrix[®])

FH:

- Mother: deceased (breast cancer)
- Father: deceased (stroke)
- Brother: alive (72 years); HTN, COPD

SH:

- Drinks socially (3-4 beers on the weekends)
- Denies smoking and illicit substance use

Medications:

- Spiriva[®] Handihaler[®] one capsule daily
- Ventolin[®] HFA two puffs four times daily PRN
- Lisinopril/HCTZ 20/12.5 mg one tablet daily
- Sertraline 50 mg one tablet daily
- Lantus Solostar[®] 100 u/mL 30 units subcutaneously daily at bedtime
- Viagra[®] 50 mg one tablet one hour prior to sexual activity

Labs/vitals:

- BP 148/82 mmHg
- HgbA1c 8.4%

SDH: JP has been married for 35 years and is a retired electrician. He has traditional Medicare and a Medicare Part D plan that his son helped him to choose two years ago. His retirement income is limited; he states he can only afford generic medications and can often only pay for his inhalers and his insulin every other month. He has tried different inhalers that are often too expensive for him. His doctor prescribed the Spiriva[®] Handihaler[®] about six months ago, but he admits that he struggles to use the capsules in the device due to his arthritis.

Case Questions

1. What factors should be considered when finding a plan for this patient?
2. Through what type of Medicare plans are beneficiaries able to access Medicare Part D benefits?
3. What information and strategies could you discuss with JP to help him better afford his medications like his insulin and inhalers? Are any of JP’s drugs NOT covered by his Medicare Part D plan?
4. The Medicare website is a helpful resource to help individuals find the most cost-effective coverage. JP needs help with finding a new plan. He fills his medications at the retail pharmacy CVS, has a zip code of 01608, and does not qualify for any assistance with the cost of his medications. Utilizing the Medicare Plan Finder to compare the available options, what stand-alone Medicare Part D plan has the lowest annual cost including the plan premium and medication costs?
5. How does JP benefit from the identification of Medicare’s six protected classes?
6. Would JP’s Shingrix[®] vaccine be covered under his Medicare Part D plan or his Medicare Part B? Would JP have to pay out

of pocket costs to receive this vaccine?

Author Commentary

Patients who cannot access medications due to cost or the inherent complexity of their Medicare Part D plan may be at risk for health complications and serial hospitalizations due to non-adherence.⁴ There are safeguards built into the Medicare Part D plans to ensure medication accessibility and equity for Medicare beneficiaries, including tiered costs, special insulin tiers, and protected medication classes. However, many patients are unaware of these benefits or struggle with health literacy challenges that prevent them from maximizing the benefits of these plans.⁹

Pharmacists, with their broad knowledge of drug classes and insurance complexities, are key health care advocates who can assist Medicare patients with these challenges. While helping patients to navigate the Medicare plan choices and understand the structure and benefits of the plans, pharmacists can help to improve medication access, reduce overall medication costs, and improve health outcomes for their patients.⁴ Pharmacists may also incorporate other assistance programs to help improve access and reduce medication costs even for those who have chosen an appropriate Medicare plan; for example, if a patient is eligible for a state pharmacy assistance program (SPAP), the costs associated with Medicare Part D may be lower. Pharmacists should become familiar with general eligibility requirements for state insurance assistance, Extra Help through Social Security, manufacturer assistance programs, discount programs like GoodRx, and Medicaid dual eligibility.

Patient Approaches and Opportunities

As one of the most accessible healthcare providers, pharmacists can be invaluable resources for their Medicare patients. Even simple recommendations can save Medicare patients significant costs during the year, including reminding patients to review their plans annually to ensure their current medications are on the plan's formulary, assisting with identifying coverage restrictions, and reminding patients to budget accordingly for renewed deductibles that come every January.⁵

Additionally, pharmacists can recommend generic drugs, biosimilars, and appropriate therapeutic alternatives that may be in lower cost tiers to further reduce patients' costs. Requesting 90-day refills from prescribers can improve adherence and reduce copays. Pharmacists can also use this opportunity to ensure a patient's chosen pharmacy will accept their preferred plan and potentially reduce copays. This strategy may encourage Medicare patients to use a single pharmacy for their prescriptions which can improve their adherence and overall health outcomes.⁴

Medication therapy management (MTM), or comprehensive medication review (CMR), is an additional component of Medicare Part D that can be administered by pharmacists to benefit patients. Each insurance plan has criteria for MTM eligibility and may require the beneficiary to have three specific disease states, eight medications, and drug costs that reach the coverage gap to be eligible for MTM services.⁶ If patients do not have the required disease states or have reduced drug costs due to prescription cost assistance programs, they may not meet the criteria, even if they are taking multiple medications to treat multiple conditions. However, MTM services are excellent opportunities to improve adherence, identify therapeutic alternatives, reduce polypharmacy, and lower costs for Medicare patients.⁴

Important Resources

Related chapters of interest:

- [Communicating health information: hidden barriers and practical approaches](#)
- [Equity for all: providing accessible healthcare for patients living with disabilities](#)
- [Let your pharmacist be your guide: navigating barriers to pharmaceutical access](#)

External resources:

- Websites:
 - Medicaid. State overviews. <https://www.medicare.gov/state-overviews/index.html>
 - Medicare. Find health and drug plans. www.medicare.gov
 - Medicare. Find out if your state has a state pharmaceutical assistance program. <https://www.medicare.gov/pharmaceutical-assistance-program/#state-programs>

- Medicare. Assistance with Medicare Part D drug costs (manufacturer prescription assistance programs). <https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovGenIn/PAPData>
- Medicare. Six ways to get help with prescription drug costs. <https://www.medicare.gov/drug-coverage-part-d/costs-for-medicare-drug-coverage/costs-in-the-coverage-gap/6-ways-to-get-help-with-prescription-costs>
- Medicare Rights Center, MedicareInteractive.org. Medicare coverage overview. <https://www.medicareinteractive.org/get-answers/medicare-basics/medicare-coverage-overview>
- Social Security Administration. Extra help with Medicare prescription drug plan costs. <https://www.ssa.gov/benefits/medicare/prescriptionhelp/>
- NeedyMeds. Find help with the cost of medicine. <https://www.needymeds.org/>
- Health Affairs. The Part D senior savings model: reducing out-of-pocket costs for insulin in Medicare Part D. <https://www.healthaffairs.org/doi/10.1377/hblog20200311.582575/full/>
- Journal articles:
 - Huffman KF, Upchurch G. The health of older Americans: a primer on Medicare and a local perspective. *J Am Geriatr Soc* 2018;66(1):25-32.

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9. Jacobson G, Swoope C, Perry M. How are seniors choosing and changing health insurance plans? Published May 13, 2014. <https://www.kff.org/medicare/report/how-are-seniors-choosing-and-changing-health-insurance-plans/>. Accessed January 13, 2021.

Glossary and Abbreviations

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1.36: Expanding the pharmacists' role- assessing mental health and suicide

TRIGGER WARNING

This case discusses mental health and suicide and may be a trigger for those who have had someone in their lives attempt or die by suicide. Those individuals are encouraged to prepare emotionally before proceeding.

Learning Objectives

At the end of this case, students will be able to:

- Identify appropriate screening tools for assessing depression and suicide risk
- Apply the DSM-5 diagnostic criteria for major depressive disorder
- Identify available mental health resources that pharmacists can provide to patients
- Recognize words or phrases that pharmacists may be on alert for in conversations with patients who have depression or are suicidal
- Describe the role that pharmacists can play in the early assessment, intervention, and treatment of mental health disorders in the populations they serve

Introduction

According to the National Institute of Mental Health (NIMH), approximately 17.3 million or 7.1% of all American adults have experienced at least one major depressive episode in their lifetime with a higher prevalence among adult females compared to males (8.7% vs. 5.3%).¹ Depression is the most common mental disorder, and is treatable.² However, if left untreated, depression can lead to relationship problems, lost work productivity, and personal and/or family suffering, among other effects. Despite the availability of effective treatment options, current depression care is subpar due to a lack of recognition of the condition or underdiagnosis by healthcare professionals.

Depression is often comorbid with other mental health diagnoses, with most chronic medical conditions increasing the risk of depression.³ The overlap of chronic medical conditions with mental health disorders is a significant challenge for healthcare professionals and patients alike. Frequently, depression is the unrecognized and undiagnosed part of the comorbidity because healthcare professionals may not be appropriately trained to recognize and respond to associated symptoms.³ Inadequate recognition, diagnosis, and treatment of depression by healthcare professionals, combined with a stigma toward individuals with depression and poor patient medication adherence, contributes to negative patient outcomes.

Alongside this, suicide is also a major public health concern worldwide. According to the Centers for Disease Control and Prevention (CDC), in 2018, suicide was the tenth leading cause of death overall in the United States, claiming more than 48,000 lives.⁴ Individuals may seek suicide as a solution to a multitude of issues, including biological, psychological, social, cultural, spiritual, economic, and environmental concerns. Depending on the interactions of these factors, an individual experiencing suicidal thoughts may be discouraged from seeking help. Stigma also contributes to patients' help seeking behaviors and can often lead to patients not being able to access the care they need.

Healthcare professionals have a responsibility to play a vital role in the identification and management of depression and suicide risk. In fact, the US Preventive Services Task Force (USPSTF) recommends screening for depression with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.⁵ Depression screenings can be utilized across multiple settings. Since pharmacists are on the front lines of patient care, they are readily available and uniquely positioned to assess risk and implement interventions to support an individual's safety across the continuum of care. Pharmacists can build long-term relationship with patients and administer self-reported depression and/or suicide screening tools to determine a patient's current level of risk, as well as connect patients experiencing depression and/or suicidal thoughts with appropriate resources.

Case

Scenario 1.36.1

You are an ambulatory care pharmacist connected with a family medicine clinic.

CC: “I feel hopeless with all of these new medications I have to take. I don’t have the energy to deal with all of these pills and shots.”

Patient: RJ is a 47-year-old male (72 in, 108 kg) who was recently diagnosed with T2DM and HTN, after seeing a primary care provider for the first time in 10 years.

HPI: RJ is meeting with you today because he is worried about his health, new diagnoses, and the diseases progressing. RJ has never been diagnosed with depression, but he admits to feeling unhappy “for a while now.” He states that his visit with his primary care provider made it worse. Upon asking RJ about his diagnoses, he mentioned that he has not had the desire to leave his home because he feels ashamed and thinks others will judge him for “always letting food get the best of him.” He mentions that he feels like he is always hungry, is sleeping throughout the day, has not been excited about his hobbies, and feels lonely because he is constantly letting others down. After hearing RJ’s story, you ask him to complete a depression screening.

PMH: T2DM (diagnosed one month prior; HTN (diagnosed one month prior); appendectomy (15 years ago)

FH:

- Mother deceased (stroke, age 84)
- Father deceased (heart attack, age 78); T2DM
- Brother depression (diagnosed age 50)

SH:

- 1-2 alcoholic beverages per night

Medications:

- Metformin 1000 mg ER tablets once daily
- Liraglutide 1.2 mg subcutaneously once daily
- Simvastatin 20 mg tablet once daily at bedtime
- Amlodipine 5 mg tablet once daily
- Lisinopril 10 mg tablet once daily

Allergies: NKDA

Vitals:

- BP 131/80 mmHg
- HR 80 bpm
- RR 16/min

Labs:

- HgbA1c 8.4%
- Total cholesterol 212 mg/dL
- HDL 45 mg/dL
- Triglycerides 150 mg/dL
- LDL 119 mg/dL

SDH: Unemployed

Additional context: The patient does not have prescription medication insurance.

Case Questions

1. What is the DSM-5 diagnostic criteria for a major depressive episode?
2. What are some words or phrases that you might look out for in your conversation with RJ that he might use to describe these symptoms?
3. You decide to complete a depression screening tool during RJ's visit. What tools are available for depression that might be useful?
4. Once a patient is screened for depression, what are the appropriate next steps?
5. RJ answers affirmatively to the question about suicide in the depression screening tool, indicating that he is considering suicide. What screening tools can be used to specifically assess suicide risk?
6. What mental health resources are available to provide to RJ?
7. RJ has expressed worry about his new diagnoses and health. You also note that he is unemployed and does not have prescription insurance coverage. As the ambulatory care pharmacist, you have developed a list of local resources that are available to help patients pay for their medications. What questions could you ask RJ to determine if he needs referral to these resources?

Author Commentary

Depression and suicide are significant public health problems in the United States. *Healthy People 2030* has 25 objectives related to mental health and mental disorders.^{6,7} The objectives relevant to this case include: (1) increase the proportion of primary care visits where adolescents and adults are screened for depression, (2) increase the proportion of adults with depression who get treatment, and (3) reduce the suicide rate. The objective to reduce suicide rate is also a leading health indicator, which means that it is a high-priority objective.⁸ This finding makes addressing these public health objectives even more of a priority in the years to come.

Pharmacists who work in a variety of settings have a unique opportunity to complete mental health screenings and if necessary, make referrals for mental health treatment. A systematic review by Miller and colleagues identified 10 published studies in which pharmacists were involved in screening for depression with a validated tool in the community or outpatient clinic pharmacy setting.⁹ One of the limitations of currently available studies is that the clinical outcomes of pharmacist-led screening tools have not been studied. Implementation and evaluation of these services would provide an opportunity for pharmacists to expand our role in this area.

Patient Approaches and Opportunities

All pharmacists should have a list of local mental health resources readily available to provide help in emergency situations or to refer patients who need to establish psychiatric care. Pharmacists should be aware of depression and suicide screening tools, including when and how to use them. When talking to patients, listening to the words that patients are using can help determine if the patient may have underlying mental health concerns. Pharmacists should have a strategy in place for managing patients with suicidal ideation with or without a plan. Patients who are not actively suicidal but have a positive depression screening should be referred to a provider for further evaluation and subsequent treatment, if appropriate. Patients with comorbidities that increase their risk for depression should be screened periodically. It is important to develop an open and trusting relationship with the patient to prevent stigmatization and allow the patient to be comfortable to discuss their mental health. Pharmacists can also serve as a great resource for education regarding antidepressant therapy, including efficacy timelines, potential adverse effects, and the potential for multiple medication trials.

In addition to screening and referring to services, pharmacists play a vital role in educating patients about their mental health medications, including antidepressants. Discussing the delayed onset of action of antidepressants and that they may need a trial of multiple antidepressants to find the right one provides the patient with realistic expectations about their medications. In addition, educating patients that depression is a treatable chemical disorder can provide hope for patients who may initially feel discouraged about their antidepressant therapy. Encouraging patients to stick with their antidepressant through transient side effects and trial and error can help patients to stay focused on finding the best treatment for them.

Important Resources

Related chapters of interest:

- Communicating health information: hidden barriers and practical approaches
- Laying the foundation for public health priorities: Healthy People 2030
- Sweetening the deal: improving health outcomes for patients with diabetes mellitus
- Digging deeper: improving health communication with patients

External resources:

- Websites:
 - DSM-5 Diagnostic criteria for depression. <https://www.psycom.net/depression-definition-dsm-5-diagnostic-criteria/>
- Tools/instruments (please check permissions prior to use):
 - Center for Epidemiologic Studies Depression Scale (CES-D). <https://www.apa.org/depression-guideline/epidemiologic-studies-scale.pdf>
 - Zung Self-Rating Depression Scale (ZDS). http://www.mentalhealthministries.net/resources/flyers/zung_scale/zung_scale.pdf
 - Quick Inventory of Depressive Symptomatology (QIDS SR-16). <https://loricalabresemmd.com/wp-content/uploads/2017/12/qids-sr16.pdf>
 - Patient Health Questionnaire -9 (PHQ-9). <https://integrationacademy.ahrq.gov/sites/default/files/2020-07/PHQ-9.pdf>
 - Hamilton Depression Rating Scale (HAM-D-21). <https://dcf.psychiatry.ufl.edu/files/2011/05/HAMILTON-DEPRESSION.pdf>
 - Montgomery-Åsberg Depression Rating Scale (MADRS). <https://www.apa.org/depression-guideline/montgomery-asberg-scale.pdf>
 - APA Clinical Practice Guideline for the Treatment of Depression. <https://www.apa.org/depression-guideline/epidemiologic-studies-scale.pdf>
 - Ask Suicide-Screening Questions Toolkit. <https://www.nimh.nih.gov/research/research-conducted-at-nimh/asq-toolkit-materials/index.shtml>
 - Columbia Suicide Severity Rating Scale (C-SSRS). https://suicideriskassessment.com.au/wp-content/uploads/2019/04/Columbia_Suicide_Severity_Rating_Scale.pdf
 - Substance Abuse and Mental Health Services Administration (SAMHSA) Suicide Assessment Pocket Card. <https://store.samhsa.gov/sites/default/files/d7/priv/sma09-4432.pdf>
 - Safety Plan Worksheet. <https://www.healthquality.va.gov/guidelines/MH/srb/PHCoEPatientSafetyPlanSelfPrint3302020508.pdf>
 - Ed-SAFE Secondary Screener (ESS-6). <https://www.sprc.org/sites/default/files/ED-SAFE%20Secondary%20Screener%20and%20Tip%20Sheet.pdf>
 - Patient Safety Screener (PSS-3). <https://www.sprc.org/sites/default/files/Patient%20Safety%20Screener%20%28PSS-3%29%20and%20Tip%20Sheet.pdf>
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.37: Bridging the gap between oncology and primary care- a multidisciplinary approach

Learning Objectives

At the end of this case, students will be able to:

- Describe the co-management of patients with cancer and certain comorbidities
- Identify the role of pharmacists in improving care in patients with cancer
- Discuss instances where high-risk cancer patients need support from a primary care pharmacist
- Explain the relationship between the impact of cancer on comorbidities and the effect of comorbidities on cancer outcomes

Introduction

Cancer therapy is increasingly shifting from cytotoxic to molecular targeted treatments, with an expanded number of oral anticancer agents (OAA) being approved and used.¹ In addition, the average duration of cancer therapy treatment has doubled in the last decade from four months in the late 1990s to nine months in 2010-2014.¹ OAA are taken for more extended periods of time, transforming cancer treatment management to be similar to that of many chronic diseases. Accordingly, cancer treatment regimens introduce drug interactions with other treatments and can cause worsen the severity of comorbid disease states.²

A significant proportion of patients with cancer have one or more comorbidities. Among Medicare patients 65 or older with cancer, 40% have at least one comorbidity and 15% have two or more, with the most common being cardiovascular disease, diabetes mellitus, and mental health disorders.² OAA treatments such as tyrosine kinase inhibitors, endocrine therapy, and steroids can aggravate a number of different chronic conditions. Hormonal therapies are known to induce metabolic changes that can lead to worsening diabetes control and complications. Anthracyclines and anti-human epidermal growth factor receptor 2 (anti-HER2) therapies are associated with the development of cardiac failure. Lastly, hormonal treatment for breast and prostate cancer can cause a greater likelihood and severity of osteoporosis.² In addition, cancer outcomes can be affected by comorbidities due to their impact on treatment toxicity, effectiveness, tolerability, and overall survival. As an example of how comorbidities can impact cancer treatment tolerability, patients with severe renal impairment may not be able to endure chemotherapy that is nephrotoxic, so they must instead be considered for other chemotherapy drugs.² Due to the amount of people with cancer and comorbidities, there is a clear need for collaboration between primary care providers (PCPs) and oncology specialists to ensure proper patient care and positive outcomes.²⁻⁵

Pharmacists are best suited to bridge the gaps missing between primary care and oncology due to their versatility and expertise. Studies have shown that one-third of patients with cancer are affected by drug interactions.⁶ Through performing comprehensive medication reviews (CMRs), pharmacists can resolve these interactions and optimize medication therapy. Additionally, pharmacists can manage adverse effects, which are more likely when patients are taking multiple potentially interacting medications.⁶⁻⁸ Primary care pharmacists can be utilized to assist in coordinating care, identifying, and managing adverse reactions, and improving medication use. While primary care pharmacists can complete these CMRs, they are also able to reach out to oncology pharmacists for any questions or help needed on cancer treatment and care. The management recommendations from the CMR can be discussed with the primary care physician as well as the oncologist. The long-term goal is to improve disease state management, decrease unplanned healthcare utilization, and decrease drug interactions and cancer therapy toxicity. This presents a huge opportunity for pharmacists to enhance patient care and outcomes for patients with cancer and comorbidities.

Case

Scenario 1.37.1

You are a pharmacist in the primary care setting seeing a patient to conduct a CMR

CC: “I was contacted and encouraged to follow-up with you to review my medications.”

Patient: PH is a 73-year-old woman (61 in, 77 kg).

HPI: During the visit with the primary care pharmacist, PH reports having high blood pressures with low heart rates. She also communicates concerns about her diet and exercise regimen, and her stools having been darker recently, but believes her oncologist said this was a potential side effect of her therapy. Lastly, she describes back pain and knee arthritis.

PMH:

- History of breast cancer (2004)
- Angiosarcoma of the breast (2016)
- Uncontrolled HTN
- GERD
- Major depressive disorder
- Myalgia
- Recurrent UTI
- Urgency incontinence
- T2DM

FH:

- Mother: breast cancer, heart disease, melanoma
- Father: lung cancer, stomach cancer, brain cancer
- Sister: breast cancer
- Brother: heart disease, melanoma
- Maternal aunt: breast cancer
- Paternal grandmother: brain cancer
- Paternal grandfather: clotting disorder, lung cancer

SH:

- Former smoker (quit 19 years ago; two packs per day x 30 years)
- Alcohol: two drinks/week

Medications: PH reports excellent adherence to prescribed medications with missed doses occurring rarely ever. Further pertinent findings discovered during medication reconciliation include:

- Fulvestrant 500 mg IM every 28 days
- Palbociclib 125 mg daily for 21 days followed by 7 days off, for 28-day cycles
- Enalapril 2.5 mg daily
 - Patient reports dry cough nightly since starting 2-3 months ago
- Amlodipine 10 mg daily
- Meloxicam 15 mg BID
- Ranitidine 150 mg BID
 - Patient reports “really bad” GERD symptoms and tarry stools
 - Provides little relief
- Metformin 1 g BID
- Glipizide XL 5 mg daily
- Duloxetine 60 mg daily in the morning
 - Patient reports limited relief of neuropathy, with her toes completely numb

- Gabapentin 300 mg in the morning and 600mg at bedtime
 - Patient reports only taking 300mg in the morning and 300mg in the evening
 - She reports getting groggy in morning if she takes 600mg at night
- Ondansetron orally disintegrating tab 8mg every eight hours PRN nausea
- Imodium 2 mg four times daily PRN diarrhea

Allergies:

- Codeine: N/V, dizziness
- Sulfa antibiotics: severe rash
- Sulfamethoxazole-trimethoprim: hives, edema
- Tramadol: nausea
- Ciprofloxacin: itching

Vitals:

- BP 155/85 mmHg
- HR 55 bpm
- RR 18/min

Labs: From three weeks ago:

Parameter	Value	Parameter	Value
Na	139 mEq/L	Glu	75 mg/dL
K	4.6 mEq/L	Ca	8.9 mg/dL
Cl	106 mEq/L	Alk phos	140 IU/L
CO ₂	27 mEq/L	AST	34 IU/L
BUN	29 mg/dL	ALT	39 IU/L
SCr	0.74 mg/dL	HgbA1c	8.2%

SDH: Patient is retired, widowed, and dealing with financial hardship. She uses Medicare as the primary means of paying for medications with little to no difficulty affording them. She was living in Alabama until the death of her husband last year. She has since moved back to Michigan where she is closer to her children and grandchildren. She reports difficulty getting to and from her visits and that she does not have much social interaction as her family is often busy.

Additional context: PH states her diet is not good. She enjoys cooking and baking but feels like she is hungry all the time. Despite this, she tries not to eat after 6pm each night. A typical day of eating for her includes a breakfast with eggs, bagel/English muffin, bacon/sausage and “weak coffee,” lunch with a half sandwich with avocado and tomato, and dinner with either spaghetti, meat/potatoes, hamburgers, broccoli/zucchini. She may incorporate snacks with fruit or yogurt and drinks a lot of water (no pop or iced tea). Overall, PH says she is “not a big veggie person” and states she “grabs junk stuff.” She is very motivated to improve her diet and would like to see a dietician. She states that she is not exercising currently, but she has a friend that is western dancing and is interested to start doing this again soon. However, she has recently gained 25lbs, which she is not pleased about. However, she is motivated to make changes for the better.

Case Questions

1. What patient factors must you take into consideration when optimizing PH's medication regimen?
2. What SDH/SDOH might be relevant to PH's situation?
3. What might the primary care pharmacist need to refer to the oncology pharmacist for?
4. What are impacts of cancer therapies on comorbid conditions, considering this patient's current medical history?
5. What specific gaps in care can you identify with PH and how can you as the pharmacist assist her?
6. Based on the medication reconciliation performed in the clinic today, what changes to her therapy would you recommend to the PCP?
7. What lifestyle recommendations would you recommend for PH?

Author Commentary

Coordination of care can be complicated for patients with cancer. Oftentimes, primary care will take a step back when there is a cancer diagnosis. In some cases, the oncologist acts as the primary provider during cancer treatment, which can result in suboptimal care of non-cancer comorbidities.⁹ Forty percent of oncologists report having ongoing communication with PCPs, and both oncologists and PCPs both acknowledge the PCP's lack of experience in cancer care as another barrier.¹⁰ Accordingly, there is uncertainty regarding which aspects each team can and will manage.¹⁰ The suboptimal care, lack of communication, and knowledge barrier leaves a gap in care for a very large population of patients. While it might not be feasible for the oncologist to keep in constant communication with the PCP, it is an opportunity for a non-physician team member such as a pharmacist to take on this role.¹¹ With pharmacists working to optimize medications and serve as a source of communication, they are directly enhancing patient care. Involvement of a pharmacist has a positive impact on clinical outcomes and decreases unplanned healthcare utilization.¹²

Patient Approaches and Opportunities

Pharmacists have multiple opportunities to positively impact patients with cancer and other comorbid conditions. Pharmacists can serve an essential role with medication reconciliation, review, and optimization alongside the primary care physician or oncologist. Pharmacists are also utilized to educate patients on expected side effects from cancer treatment, as well as methods that can be used to mitigate such side effects. For example, pharmacists can inform patients of possible chemotherapy induced nausea and vomiting and can speak with the PCP about prescribing ondansetron if needed. In addition, pharmacists can engage patients in conversations regarding their medications, identifying any adverse reactions or interactions that the patient may have either knowingly or unknowingly encountered. By looking specifically for interactions between cancer and non-cancer therapies, pharmacists can suggest ways to decrease use of unnecessary medications. They can also counsel on the importance of adherence to maintaining overall health, combat medication-related problems, make changes, and communicate with the primary care physician and oncologist throughout the whole process. In addition, pharmacists are in an ideal position to help shift to a path that proactively identifies patients at highest risk for toxicities or complications from their cancer treatment to help impact the care for this patient population.¹³ The accessibility and resourcefulness of pharmacists makes them very beneficial to patients and the health system.

Important Resources

Related chapters of interest:

- [Medication safety: to 'error' is human](#)
- [Pharmacists and Medicare Part D: helping patients navigate their prescription benefits](#)
- [Deprescribing in palliative care: applying knowledge translation strategies](#)

External resources:

- Michigan Oncology Quality Consortium. <https://moqc.org/>
- Mohamed M, Ramsdale E, Loh K, Arastu A, Xu H, Spencer O, et al. Associations of polypharmacy and inappropriate medications with adverse outcomes in older adults with cancer: a systematic review and meta-analysis. *Oncologist* 2020;25:e94-e108.
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.38: A stigma that undermines care- opioid use disorder and treatment considerations

Learning Objectives

At the end of this case, students will be able to:

- Describe the public health impact of opioid use disorder in the United States
- Explain the role of social determinants of health in substance use disorders
- Describe FDA-approved medications for treatment of opioid use disorder
- Identify stigma as a major barrier to opioid use disorder treatment

Introduction

The opioid epidemic and opioid use disorder (OUD) are issues of critical importance to pharmacists of all areas of practice. In the United States, two-thirds of drug overdose deaths (47,600) in 2017 involved opioids.¹ Fentanyl and fentanyl analog (FA)-related deaths have increased dramatically in the last several years, with much of the fentanyl identified consisting of illicitly manufactured fentanyl (IMF).^{2,3} Furthermore, the COVID-19 pandemic resulted in an acceleration of overdose deaths.⁴ Synthetic opioids are thought to be the primary driver of this increase, discovered as contaminants in non-opioid drugs of misuse such as cocaine and methamphetamine in addition to opioids such as heroin, although it is known that lack of access to prevention, treatment, recovery and harm reduction services also played a role.⁴ The intersection of race and geography compound opioid-related disparities,⁵ and lack of access to treatment and recovery programming has been a long-standing issue in rural and tribal communities and urban neighborhoods characterized by high rates of poverty.⁶

Stigma is defined as an attribute, behavior, circumstance, or condition that is socially discrediting, and is known to be a major barrier to seeking help for a substance use disorder (SUD). Of the more than 23 million Americans who meet criteria for a SUD each year, it is estimated that only 10% access treatment.⁷ Two main factors that influence stigma are cause and controllability: stigma decreases when people perceive that the individual is not responsible for causing his/her problem and when he or she is unable to control it.⁸ Research shows that one critical contributory factor to the perpetuation of stigma is the language used to describe SUD; use of medically and scientifically accurate terms such as substance use disorder and opioid use disorder is consistent with a public health approach that acknowledges the physiological component of addiction.⁸ Healthcare professionals can reduce stigma by using non-punitive and medically accurate terminology by removing the terms “abuse,” “abuser,” “junkie,” “dirty,” and “clean” from our vocabulary.

Opioid use disorder (OUD) is a diagnosis introduced in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).⁹ Although OUD is a generic term given in the DSM-5, the guidelines indicate that the diagnosis should include the actual opioid drug being used by the individual (e.g., heroin use disorder for individuals who use the opioid heroin).⁹ The diagnosis of OUD can be applied to someone who uses opioid drugs and has at least two of a list of symptoms provided by DSM-5 within a 12-month period.⁹ While behavioral interventions have been the foundation of treatment of OUD for many years, abstinence-based programs have been shown to be inferior to medication.¹⁰ Medications for opioid use disorder (MOUD), also sometimes known as medication-assisted treatment (MAT), is an approach to treating OUD that combines the use of FDA-approved drugs with counseling and behavioral therapies.¹¹

Methadone and buprenorphine have been shown to reduce opioid cravings, increase treatment retention, reduce illicit opioid use, and increase overall survival.^{10,12,13,14} Some research has shown that treatment with buprenorphine may be successful even without counseling and behavioral therapies.¹¹ Buprenorphine is also combined with naloxone, an opioid antagonist, to deter abuse of the formulation. This combination drug is available in tablet form (Zubsolv; Orexo US, Inc.) and as a sublingual film or tablet (Suboxone; Invidior). Naltrexone is a competitive opioid antagonist that is FDA approved for both alcohol and opioid use disorders and is available as an extended-release injection of naltrexone base (Vivitrol, Alkermes) and as a 50-mg oral tablet of naltrexone hydrochloride. Harm reduction, a set of strategies and ideas aimed at reducing the negative consequences associated

with substance use, is another approach used in caring for individuals with SUD. These strategies support increasing the safety of drug use, meeting people “where they are at,” and addressing specific conditions of drug use. Examples of harm reduction tools/ models used in opioid use disorder management include naloxone for prevention of opioid overdose, access to sterile syringes to prevent infection, fentanyl testing, and supervised consumption services.¹⁵

Case

Scenario 1.38.1

You are a clinical pharmacist working at a primary care clinic in a homeless shelter. You work as part of the primary care team that provides MOUD to people with OUD.

CC: “My urine is going to be dirty.”

Patient: DS is a 41-year-old male (67.7 in, 89 kg) who presents to the clinic today to start treatment for OUD.

HPI: DS has been on buprenorphine-naloxone in the past for OUD. He notes that this was helpful, but he relapsed and ran out of medication refills. Until recently, he was experiencing street homelessness but was able to find a bed in the shelter (where you are seeing him). He reports use of heroin and cocaine in the past two days to manage cravings and withdrawal symptoms.

PMH: OUD; allergic rhinitis; HTN; T2DM

FH:

- Father deceased (54 years old, heart disease); cannabis/EtOH/cocaine use
- Mother alive; s/p CVA, cannabis/EtOH/cocaine use
- Three sisters
 - HTN
 - HTN, tobacco/ETOH use
 - HTN, DM, tobacco/cannabis use

SH:

- Use of IV and IN heroin since age 16
- History of cocaine, oxycodone, and benzodiazepine use
- Drinks alcohol socially
- Uses tobacco (½ pack per day x 25 years)

Medications:

- Loratadine 10 mg once daily
- Lisinopril 20 mg once daily
- Metformin 1000 mg twice daily

Allergies: NKDA

Vitals:

- BP 135/83 mmHg
- HR 91 bpm
- RR 16/min
- Temp 98.4°F
- Pulse ox 98% on RA

Labs:

Parameter	Value	Parameter	Value
Na	135 mmol/L	HgbA1c	6.8%
K	5.0 mmol/L	Glu	100 mg/dL
Cl	97 mmol/L	Ca	9.5 mg/dL
CO ₂	25 mEq/L	AST	23 IU/L
BUN	19 mg/dL	ALT	27 IU/L
SCr	0.78 mg/dL		

- STI screening negative
- Urine drug screen
 - Amphetamines negative
 - Benzodiazepines positive
 - Cannabinoid negative
 - Cocaine positive
 - Opiates positive
 - Methadone negative
 - Fentanyl positive
 - Buprenorphine negative
 - Norbuprenorphine negative

ROS:

- Alert and oriented x3, comfortable
- Psych appropriate mood and affect

Surgical history/hospitalizations:

- ER visit one year ago for opioid overdose
- Left knee replacement two years ago

SDH: DS reports that his heroin use has prevented him from keeping stable housing. He has been experiencing homelessness for the past two years. He left the shelter during the height of the COVID-19 pandemic due to overcrowding and concern about getting infected. He was experiencing street homelessness for the past six months, but he has now returned to the shelter and reports it is less crowded. DS is currently unemployed with no income. In the past, he worked for a moving company but had to stop due to pain in both knees, despite a left knee replacement. He wants to renew his license to become a cab driver. He does not have health insurance, and receives medical care, including medications, free of charge through this clinic. DS keeps in touch with one of his sisters, but their relationship has been strained since he started treatment for OUD. His sister was not supportive of his decision and told him that he was “substituting one drug for another – what’s the difference?”

Additional context: DS reports that he grew up in a home with alcohol and drug use and was abused as a child. He believes that this has impacted his mental health and coping strategies as an adult.

Case Questions

1. What components of the DS’s history may have put him at risk for OUD? What risk factors does he have for opioid overdose death?
2. What are the FDA-approved treatment options for DS and his OUD? Compare and contrast their pharmacology, administration, and prescribing/accessibility.
3. How would you discuss today’s urine drug screen results with DS?
4. After further discussion with you, DS says that he would like to seek treatment with buprenorphine again since he reports it had been helpful in the past and it is easily accessible through his primary care physician’s office and local pharmacy. When would it be appropriate to initiate treatment with buprenorphine for OUD?
5. What other healthcare professionals can we pull in to help address DS’s OUD and optimize treatment?
6. What are the goals of therapy for treating DS’s OUD with buprenorphine?

7. What harm reduction interventions can you recommend for DS?
8. What would you tell the patient regarding his sister's perception that he is "substituting" his substance use by starting treatment for OUD, and that it is "no different" from heroin?
9. Knowing about this patient's substance use history, are there any drug interactions you might want to warn him about?

Author Commentary

Pharmacists continue to play significant and expanding roles in addressing the opioid epidemic. For example, pharmacists can prevent opioid misuse by identifying risk factors for OUD and overdose through utilizing prescription drug monitoring programs (PDMPs) and facilitating safe disposal of medications by hosting "drug take back days." Pharmacists can also educate patients, caregivers, and members of the care team about the safe and effective use of treatments for opioid use disorder and for prescription opioids. Another role for pharmacists in opioid use disorder management is monitoring drug therapy for treatment of opioid use disorder or management of pain for efficacy and safety. Pharmacists are involved in practicing harm reduction, including improving access to naloxone and sterile syringes for people who use drugs. Pharmacists may address and prevent substance use stigma in both patient interactions and training of health care staff. In these roles, pharmacists collaborate with other healthcare professionals to optimize treatment outcomes for patients.¹⁶

Patient Approaches and Opportunities

Pharmacists have numerous opportunities for interventions to improve outcomes or lesson harm in people with OUD. Social determinants of health play a critical and under-addressed role in substance use. It is imperative to recognize that homelessness, lack of health insurance, and unemployment can affect how people with OUD can access treatment services.

It is important for pharmacists to avoid stigmatizing language and utilize harm reduction tools and approaches when working with patients with OUD. Stigma is a barrier that prevents many individuals with substance use disorders from seeking treatment. Further, for those who do seek treatment, stigma can negatively impact the care that is provided by some healthcare professionals who fail to address underlying causes OUD.¹⁷

Harm reduction tools can limit negative consequences associated with drug use while maintaining respect for the rights of people who use drugs.¹⁸ Additionally, it is common for an individual with a OUD to use more than one drug, and it is also common for opioids purchased on the street to be laced with other drugs, including fentanyl analogues.^{2,3} Offering naloxone to patients for opioid overdose reversal and prevention of fatal overdose is a significant and potentially life-saving intervention that pharmacists can make in a variety of pharmacy practice settings. Also, pharmacists can identify and educate patients about drug interactions between opioids and other sedatives such as alcohol and benzodiazepines. Concurrent tobacco use is also common among people with OUD; pharmacists are well-poised to support these individuals in tobacco cessation.

Important Resources

Related chapters of interest:

- [Safe opioid use in the community setting: reverse the curse?](#)
- [Smoke in the mirrors: the continuing problem of tobacco use](#)
- [Harm reduction for people who use drugs: A life-saving opportunity](#)
- [PrEPare yourself: let's talk about sex](#)

External resources:

- Websites:
 - National Institute on Drug Abuse. Opioid overdose crisis. <https://www.drugabuse.gov/drug-topics/opioids/opioid-overdose-crisis>
 - Treatment guidelines
 - Substance Abuse and Mental Health Services Administration. Medications for opioid use disorder. Treatment Improvement Protocol (TIP) Series 63, Full Document. HHS Publication No. (SMA) 18- 5063FULLDOC. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2018.
- Journal articles:

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.39: Deprescribing in palliative care- applying knowledge translation strategies

Learning Objectives

At the end of this case, students will be able to:

- Define palliative care with a focus on the adult patient
- Provide an overview of the evolution of palliative care practices
- Explain the different facets of palliative care including underlying disease management, symptom management and palliative care emergencies
- List the barriers and facilitators to knowledge translation in the palliative care setting
- Discuss literature on deprescribing as it pertains to palliative care

Introduction

Palliative care aims to reduce the suffering of individuals faced with chronic or life-limiting illness by improving quality of life (QoL) for both patients and their care providers.^{1,2} The purpose of palliative care is to manage pain, provide psychological, spiritual, social, and emotional support as well as support family members with the coping and bereavement process.^{2,3} Studies have shown that palliative care not only enhances QoL for the patient but also positively influences the course of disease or illness.² Palliative care also encompasses the management of major medical emergencies such as hypercalcemia, spinal cord compression, pain crisis, significant breathing difficulties and bone fractures.^{4,5} Hospice is a subdomain of palliative care that is intended to support the dying person in achieving peace, comfort and death with dignity.²

The term “palliative care” was first defined by a Canadian physician, Dr. Balfour Mount in 1975.⁶ Palliative care, at an international stage, began to be recognized for cancer patients in the 1980s with increasing awareness for need in other chronic diseases such as HIV/AIDS, heart failure and neurodegenerative diseases over time.² Thereafter, the World Health Organization (WHO) published guidance on cancer pain therapies in 1986 which was later revised in 1996 to include a guide on opioid availability.⁶ In 2014, the World Health Assembly comprehensive palliative care resolution was created that informed the writings in the Global Atlas of Palliative Care at the End of Life.⁶ Palliative care is still considered an underdeveloped area of practice around the world, particularly outside of North America, Europe and Australia.²

According to the WHO, approximately 40 million people require palliative care every year worldwide with almost 80% of those individuals residing in low to middle-income countries.⁷ However, due to a variety of barriers, there remains an unmet need for palliative care implementation in many parts of the world.² Some of the barriers to the provision of palliative care include: (1) uncertainty or poor experience with palliative care or end of life discussions in the past, (2) lack of recognition of the impact of pain and ineffective symptom management on quality of life, and (3) cultural considerations around the topic of death and dying.^{5,8}

Knowledge translation, which encompasses knowledge transfer and exchange, refers to the processes and frameworks applied to create a synthesis of evidence and information from research to be translated into a format that is usable for the stakeholder of interest,⁹ be it clinicians, public health or patients and their caregivers. A very commonly applied knowledge translation framework developed by Graham *et al.* known as the knowledge-to-action framework applies an iterative and dynamic process to move information from research into action.^{9,10} Knowledge translation faces a very unique challenge in palliative care environments due to the negative perception of palliation and end-of-life.⁸ Some of the barriers that palliative care researchers often face in the process of knowledge translation in the setting of palliative care are communication gaps, skepticism about the value and strength of evidence for palliative care frameworks, and competing priorities in the health services.⁸ Resources created through knowledge translation can include guidelines, toolkits and education sessions. The process of knowledge translation can help to improve uptake and utilization of palliative care practices around the world.

Polypharmacy, defined as taking five or more medications on a regular basis, whether prescribed or non-prescribed, is common in the palliative setting.^{11,12} Polypharmacy has been associated with higher symptom burden and lower quality of life for individuals with advanced illness¹³ with the number of drugs taken being the important predictor of harm.^{14,15} Therefore deprescribing can help to optimize medication use, reduce overall medication burden, and avoid drug-related adverse effects and harm. Deprescribing is a systematic approach to identify and discontinue medications where harm outweighs benefit within the context of an individual's care goals, level of functioning, life expectancy, and values.¹⁵ There have been many approaches to address deprescribing but facets include: (1) obtaining an accurate medication list that includes prescribed and non-prescribed agents, (2) evaluating the risk of drug-induced harm for each agent, (3) determining indication and efficacy of each agent, (4) taking into consideration patient goals, estimated life expectancy and expected lag time for intervention benefit, creating a list of medications to be considered for discontinuation, (5) creating and implementing a deprescribing plan and clear goals for monitoring.^{13,15} Further research into the barriers and facilitators to deprescribing in the palliative care setting is needed to support global, local and organizational change, interdisciplinary communication and collaboration with patients and caregivers.¹⁶

Case

Scenario 1.39.1

You are a pharmacist at an outpatient memory clinic, accompanied by the team physician, registered nurse, occupational therapist, and social worker.

CC: "I need help remembering to take my medications, I never know when I've taken them and when I've forgotten."

Patient: FR is a 94-year-old male (69 in, 70kg) with advanced Alzheimer's disease that has been coming to this clinic annually for the past five years. He is accompanied by his 60-year-old son on today's visit. FR is being seen by your outpatient memory clinic team today after recent discharge from hospital post treatment for *E. coli* bacteremia and sepsis, with the primary source of sepsis uncertain but urosepsis suspected. FR and his son bring a large shopping bag of medications, natural health products and other over-the-counter products. The medication list that accompanies these prescribed and non-prescribed agents was written 7 years ago by FR's late wife.

HPI: FR uses a walker as a mobility aid and has a shuffling gait. You note what appears to be a new tremor in his hands bilaterally and increased unsteadiness in his gait. FR is dizzy when moving from sitting to standing and notes that he is dizzy when he gets up from bed in the morning, which has been occurring for the last few months. When asked about his diet, FR notes that he eats food served by the retirement home, at which he resides but is unable to recall examples of meals. FR comes dressed for the Canadian weather, which is currently bitter cold, with a winter coat, scarf, hat, and gloves. FR can recall his name and that he is in a clinic but notes that the year is 1965 and that he is still in Greece, where he was born. He has been residing in Canada for the last 40 years.

FR's son started to notice a change in how his father was taking medications due to the number of vials, bottles and medicine cups that have been piling up on the kitchen table and on different counters around FR's residence over the last six months. FR also explained to his son that there were days when he would forget his medications entirely or would be uncertain whether he took them, so would take them again. FR's son was concerned, particularly after recent illness and hospitalization, so he called you, the memory clinic pharmacist to see if an appointment could be scheduled with the team.

PMH:

- T2DM (diagnosed 20 years ago)
- HTN (diagnosed 15 years ago)
- Dyslipidemia (diagnosed 15 years ago)
- Alzheimer's disease (diagnosed seven years ago)
- Dysphagia associated with Alzheimer's disease
- Frequent falls history (three falls in the last year)
- Recurrent colorectal cancer (diagnosed stage IV six weeks ago)
- Insomnia (diagnosed 20 years ago)

Immunizations:

- Tetanus, diphtheria & pertussis booster two years ago
- Pneumococcal vaccine four years
- Shingles vaccine three years ago
- Influenza vaccine annually

FH:

- Mother: (deceased 30 years ago; MI)
- Father: (deceased 40 years ago; stage IV lung cancer)
- Siblings: none

SH:

- Social alcohol intake with 1-2 beers per day on weekends

Medications:

Prescription (oral unless noted otherwise):

- Insulin glargine 15 units subcutaneous at night
 - Occasionally checks blood glucose when he feels shaky
 - Home blood glucose readings in 54-72 mg/dL range over the last six months and is not able to help describe how he corrects hypoglycemia
- Atorvastatin 20 mg at night
- Metoprolol tartrate 25mg BID
- Perindopril 4 mg daily
- Amlodipine 5 mg daily
- Donepezil 10 mg daily
- Sitagliptin 50 mg BID
- Pantoprazole 40 mg BID
- Docusate 100 mg TID with food
- Lorazepam 0.5 to 1 mg sublingually at night as needed for sleep
 - This medication was added during a recent admission

OTC:

- Acetaminophen 500 mg QID PRN
- Cetirizine 10 mg daily PRN

Supplements and natural health products:

- Vitalux 1 tablet daily
- CoQ 10 enzyme 1 capsule daily
- Multivitamin 1 tablet daily
- Melatonin 10 mg at night
- Calcium/Magnesium 1 tablet daily
- Vitamin D 2000 IU (2 tabs) daily

Oncology regimen:

- FR's son explains that his father is on a palliative chemotherapy regimen for his colorectal cancer called FOLFIRI where he goes to an outpatient cancer center every two weeks for IV medications. He sees the oncologist every six months at least and more frequently if there are any concerns.
- FR has a list of his antiemetic regimen, which keep him relatively symptom free for nausea and vomiting and includes:
 - Ondansetron 8 mg BID for three days, start on day of chemotherapy
 - Dexamethasone 8 mg once daily for three days, start on day of chemotherapy (patient educated to take the dexamethasone first thing in the morning with breakfast to avoid affecting sleep)
 - Olanzapine 2.5 mg BID as needed for breakthrough nausea and vomiting (taken very infrequently)

Allergies: NKDA

Vitals:

- BP 114/60 mmHg (seated); 90/65 mmHg (one minute after standing)
- HR 80 bpm and regular (seated); 85 bpm and regular (one minute after standing)
- RR 15/min (seated)

Labs Last checked 72 hours ago:

Parameter	Value	Parameter	Value
Hgb	10 g/dL	Albumin, serum	3.2 g/dL
Hct	31.1%	Total bilirubin, serum	0.5 mg/dL
LKC	7000 /uL	AST	30 units/L
Iron, serum	60 ug/dL	CRP	1.4 mg/L
HgbA1c	7.8%	Total cholesterol	248 mg/dL
FBG (before supper)	70 mg/dL	HDL	58 mg/dL
Na, serum	147 mEq/L	LDL	158 mg/dL
K, serum	4.5 mEq/L	SCr	1.5 mg/dL
Ca, serum	9 mg/dL	ACR, urine	25mg/g

ROS:

- Integument: N/A
- HEENT: N/A
- Neurologic: See HPI
- Respiratory:
 - Lungs clear to auscultation bilaterally
 - No wheezing, cough, or SOB
- CV:
 - S1 is normal and S2 is normal but faint with a mild diastolic murmur appreciated
 - Peripheral edema, ++ pitting bilaterally
- Gastrointestinal: N/A
- Hepatic/renal: N/A, see labs
- MSK: N/A
- Endocrine: N/A, see labs

Surgical history:

- Cholecystectomy (30 years ago)
- Right knee replacement (20 years ago)

SDH: FR is a retired university professor who speaks English, French and Greek but his fluency of speech has degraded over last year. He previously enjoyed water painting and hiking but has been uninterested in these as of late. He was widowed nine years ago and is not currently in a relationship. He lives in a retirement home and has weekly visits from his only son and daughter-in-law; they have four children (his grandchildren).

Additional context: As the clinic pharmacist, you suggest the following: (1) a home medication review be performed in consultation with FR's primary care provider, (2) removal of all old medications from the residence, and (3) discussion around starting a blister pack to reduce the number of loose vials and other containers around the residence.

Case Questions

1. Provide a patient-centered explanation of palliative care to FR and his son.
2. Why is it important to address polypharmacy in the palliative care setting?

3. How is deprescribing defined?
4. FR is interested in the involvement of a palliative focused plan to his care while continuing to receive chemotherapy and treatment for Alzheimer's Disease. Provide a framework for deprescribing FR's medication list with patient goals in mind.
5. Discuss some of the barriers and facilitators to knowledge translation in the palliative care setting.
6. List the three most important medications in FR's regimen to consider for deprescribing and provide the reasoning for each of your choices. Based on FR's goals, he wishes to discontinue medications that have risk of causing harm and side effects.
7. List some of the other agents that you would consider discontinuing in the future with appropriate references to support deprescribing.

Author Commentary

Studies have shown that palliative care can enhance quality of life for the patient and may also positively influence the course of disease or illness.² For example, a study of patients with metastatic non-small-cell lung cancer found that early palliative care was associated with better quality of life and mood, such as lower rates of depressive symptoms, as compared to patients who received standard care alone.¹⁷ Authors noted that 33% of the palliative patients in comparison to 54% received aggressive end of life therapies and mean survival was longer amongst patients who received early palliative care.¹⁷ The ultimate goal is to integrate palliative care into mainstream healthcare systems around the world in order to ensure that patients who are in need of palliative care receive it. As healthcare providers, pharmacists are in a unique position to optimize medication regimens and reduce the medication burden for patients.²

Patient Approaches and Opportunities

Pharmacists can improve patient quality of life and caregiver burden by deprescribing unnecessary medications, ultimately lessening drug-drug interactions and reducing drug-related adverse effects. A patient-centered approach to deprescribing should be applied and should include the patient and involved family and caregivers.¹³ In order to integrate evidence-based palliative care practices into clinical settings, utilize effective communication and engagement strategies with key stakeholders during the research process to overcome barriers and improve potential buy-in.⁸

Important Resources

Related chapters of interest:

- [Medication safety: to 'error' is human](#)
- [Interprofessional collaboration: transforming public health through teamwork](#)
- [Ethical decision-making in global health: when cultures clash](#)
- [Safe opioid use in the community setting: reverse the curse?](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Communicating health information: hidden barriers and practical approaches](#)
- [Bridging the gap between oncology and primary care: a multidisciplinary approach](#)

External resources:

- Websites
 - World Palliative Care Alliance. Global atlas of palliative care at the end of life. <http://www.who.int/cancer/publications/palliative-care-atlas/en/>
 - Bruyère Research Institute. Deprescribing tools. <https://deprescribing.org/>
- Journal articles
 - Connor SR. Global aspects of palliative care. In: *Textbook of palliative care*. MacLeod RD, Van den Block L, eds. Springer International Publishing; 2019:29-36.
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.40: Let your pharmacist be your guide- navigating barriers to pharmaceutical access

Learning Objectives

At the end of this case, students will be able to:

- Describe policy, organizational, and individual factors that contribute to barriers to accessing medications and pharmaceutical care
- Identify resources to improve access to affordable medications for uninsured and underinsured patients
- Recommend appropriate resources for obtaining affordable medications

Introduction

The high cost of healthcare in the United States, spanning from the ability to afford health insurance to paying for medications and medical bills, is a public health issue that hinders access to care and contributes to poorer health outcomes. Over the past ten years, the cost of healthcare services has grown more quickly than the cost of other goods and services.¹ In a 2019 poll, half of US adults reported that they or a family member put off or skipped healthcare or dental care services due to cost.² Moreover, 29% of all adults reported that they did not fill a prescription, cut pills in half, skipped doses, or otherwise did not take their medications as prescribed due to cost.² Patients reported resorting to other alternatives for care, such as relying on home remedies or over-the-counter drugs.² The consequences are detrimental, with three in ten (29%) individuals reporting their medical condition worsened because they did not take their prescription medications as recommended.² These barriers are particularly pronounced among those who face added challenges to care, such as patients who do not have insurance, are underinsured, or have serious medical conditions.

Specifically, lack of insurance coverage and underinsurance hinders healthcare access by impacting whether someone receives care, as well as when and where they can receive care. Access to healthcare is further influenced by multi-level factors that impact pharmaceutical care. At the policy level, this includes lack of timely availability of generic alternatives, lack of policies designed to improve medication adherence, and lack of transparency in drug costs.³ These policies lead to patients paying for higher cost brand name drugs. At the community level, factors include the geographic location of pharmacies and existing transportation infrastructure. Pharmacy deserts, or neighborhoods and communities without a pharmacy or pharmacy services such as home delivery, hinder patients' ability to get medications.⁴ Organizationally, this includes disproportionate distribution of qualified and skilled healthcare workers and under-resourced health systems. These factors influence whether patients have access to a clinic nearby, which adds a notable barrier for rural communities. At the individual level, socioeconomic status in addition to the presence of complex medical conditions pose further challenges, as discussed above.

Several private and publicly funded mechanisms exist to help address barriers to medication access. For example, free clinics are safety-net organizations that often utilize volunteer health professionals to provide a range of medical, vision, behavioral health, dental, and/or pharmacy services to uninsured and underinsured patients.⁵ Websites like the National Association of Free & Charitable Clinics (NAFC) and NeedyMeds provide ways to locate the closest free clinic. Federal programs such as the 340B drug pricing program enable health clinics that care for underserved populations to reallocate and stretch limited federal resources.⁶ However, these programs are only available to qualified entities and to select patients. For individuals who need assistance with the cost of prescription drugs, prescription drug coupons and discount cards can be found through websites like GoodRx and NeedyMeds. Prescription drugs can also be obtained at little or no cost from pharmaceutical companies through patient medication assistance programs (PMAP).⁷ However, the enrollment and refill processes are not standardized, and each manufacturer's PMAP application may have different enrollment requirements. Many applications require patients to disclose their financial status, provide financial documentation such as federal income tax forms or social security benefit letters, or provide their social security number.⁸ Although programs exist to fill in the gaps in pharmaceutical access, unfortunately they are insufficient and difficult to navigate. In addition, not all medications are available, requiring therapeutic substitution. This offers pharmacists the opportunity to play an important role in helping patients navigate the resources available so that patients can obtain affordable medications.

Case

Scenario 1.40.1

You are a clinical pharmacist at a federally qualified health center (FQHC).

CC: “I want to start treatment for my Hepatitis C before I move.”

Patient: LM is a 56-year-old female (55 in, 82.6 kg) with newly diagnosed hepatitis C virus (HCV) infection who is an undocumented migrant farmworker. Over the past few months, it has been difficult for her to find work in the area, which has made it hard for her to pay for her medications and supplies. She is concerned about this because she knows she needs to take her medications to stay healthy and out of the hospital. Right now, she is holding on to hope that she might be able to find work over the next month or so but shares that she will likely need to move on to another area soon, since the seasons are changing.

HPI: After being diagnosed with HCV, the patient is feeling overwhelmed, especially due to the cost of the new medications. She states “I have heard treatment for hepatitis C is very expensive. Those medicines might cost more than everything I own!”. She is very worried but would still like to begin treatment as soon as possible, as she is unsure of when she will be able to re-establish care after she moves.

PMH: T2DM; HTN; HLD; HCV

FH:

- Mother: alive; T2DM
- Father: (deceased; MI); HTN

SH: History of substance use (alcohol)

Medications:

- Insulin aspart (Novolog) 10 units subcutaneously TID ac
- Insulin glargine (Lantus) 45 units subcutaneously daily
- Metformin 1000 mg BID
- Atorvastatin (Lipitor) 40 mg daily
- Lisinopril 20 mg daily
- Hydrochlorothiazide 25 mg daily

Allergies: NKDA

Vitals:

- BP 133/75 mmHg
- HR 78 bpm
- SpO₂ 98%
- Temp 97.8°F

Labs:

- HgbA1c: 6.8%
- Hep C screen: reactive
- Hep C quant: 872,974 unit/mL
- Hep C genotype: 3a
- HBsAg: negative
- HBsAb: 95.1 IU/L
- HBcAb: negative
- HIV status: negative
- All other labs WNL
- Imaging/Staging:

- FibroScan: 5 kPa
- Fibrosis Score: F1

ROS:

- General: negative
- Eye: negative
- Ear/Nose/Throat: negative
- Respiratory: negative
- Cardiovascular: negative
- Gastrointestinal: negative
- Genitourinary: negative
- Gynecological: no abnormal bleeding, pelvic pain/discharge, breast pain or new/enlarging lumps on self-exam
- Skin: negative
- Heme/Lymph: negative
- Musculoskeletal: negative
- Neuro: negative
- Psychiatric: anxiety
- Endocrine: negative for symptoms of hypoglycemia/hyperglycemia

Surgical history: None

SDH: LM resides in a trailer home with six other relatives, including her parents, her husband, brother, and two children. She was born, raised, and lived most of her life in Mexico, where she completed only a few years of formal education. Her primary and only fluent language is Spanish. She has worked for the past few years as a migrant farmworker. Some members of her family are documented citizens in the US; however, she is not documented, and she does not have healthcare coverage. Currently, she has no personal income, but a few members of her family have found some temporary work in the area, so there is some money for food and other expenses in their household. Access to fresh foods is challenging and sometimes she struggles to afford her diabetes testing supplies. However, LM can access many of her medications and remain adherent to her insulin because this medication is currently available through the 340B program at her clinic.

Additional context: This patient falls into the category of 'migrant farmworker' based on her work moving from state to state to harvest different crops based on the season.

Case Questions

1. What would be the best treatment and monitoring plan for LM, taking into consideration all the barriers the patient may face in completing HCV treatment?
2. What challenges does accessing HCV medications present generally in the United States?
3. How does the fact that LM is a migrant farmworker affect her access to HCV treatment?
4. What resources are available to improve medication access for patients who are underinsured or uninsured and how do patients access these programs?
5. What programs are available to patients who are not US citizens and/or are undocumented immigrants?
6. Given LM's undocumented status and lack of insurance, what specific programs or resources would you recommend to improve her access to care and help complete HCV treatment?
7. In general, what factors influence access to affordable medications at policy, organizational, and individual levels?
8. What are the consequences of lack of prescription insurance coverage medication access on patient health outcomes?

Author Commentary

Patients who lack insurance or are underinsured have complicated barriers to healthcare that can be difficult to navigate. Migrant farmworkers have added challenges to accessing adequate and consistent care. These barriers and gaps in care result from the fragmented nature of our current healthcare landscape and contribute to the pervasive health disparities and inequities that exist. Pharmacists will encounter patients who have barriers to care regardless of the pharmacy setting. Consequently, pharmacists play an important role in helping patients access affordable medications by informing them about the resources available and helping patients utilize these resources.

In addition to resources like the 340B program and PMAPs, pharmacists can help make medication regimens more affordable for patients regardless of insurance status. For example, by recognizing clinically appropriate and cost-effective alternatives for higher cost drugs, pharmacists can recommend therapeutic exchanges. In addition, pharmacists can troubleshoot and find formulary alternatives for medications that are not covered by a patient's health insurance or require prior authorization. Pharmacists can also provide education on the differences between brand and generic drugs and encourage patients to use generic drugs when appropriate. Modest adjustments, like switching certain drug formulations from capsule to tablet or cutting higher dosages in half, are other cost-cutting strategies pharmacists can recommend. Many patients have trouble affording the medications they are initially prescribed even when they do have insurance. It is important for pharmacists to recognize the responsibility they have in making medications more accessible to patients.

Patient Approaches and Opportunities

Navigating our complex healthcare system can be a challenging and confusing process for many patients, particularly for those who have added barriers such as uninsurance or underinsurance, lack of citizenship, unemployment, lack of transportation, or low health literacy. Programs like the 340B program enable qualified health clinics to provide care to patients who are uninsured on a sliding fee scale based on income, and PMAPs can help patients gain access to otherwise unaffordable medications such as long and rapid-acting insulin, GLP1 inhibitors, inhalers, direct acting antivirals, and direct oral anticoagulants. Although resources and programs are available to help improve access to care or lower prescription drug costs, there are wide variations in ways to enroll in programs and application processes, respectively. Furthermore, there is no standardized way to access all available resources. Consequently, many patients are not aware of the resources available or do not access them.

As the medication experts, pharmacists can help patients navigate these complex barriers and obtain affordable medications. Beyond that, pharmacists can help refer patients to other available programs. Because many patients may not know that these options exist, it is important to proactively broach this conversation in a sensitive and respectful way when red flags are present (i.e., inconsistently filling/refilling prescriptions, extended absences in care, or frequent emergency department visits for preventable conditions). By establishing rapport and building trusting relationships with patients, pharmacists may become increasingly aware of patients' unique needs and identify opportunities for intervention that would otherwise have gone unnoticed.

Important Resources

Related chapters of interest:

- [Plant now, harvest later: services for rural underserved patients](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [An ounce of prevention: pharmacy applications of the USPSTF guidelines](#)
- [Sweetening the deal: improving health outcomes for patients with diabetes mellitus](#)
- [Prescription for change: advocacy and legislation in pharmacy](#)
- [Uncrossed wires: working with non-English speaking patient populations](#)

External resources:

- Websites:
 - Partnership for Prescription Assistance. <http://www.pparx.org>
 - Rx Assist. www.rxassist.org
 - Needymeds. www.Needymeds.org
 - Bureau of Primary Health Care. <https://bphc.hrsa.gov/>
 - Office of Pharmacy Affairs. <https://www.hrsa.gov/opa/340b-opais/index.html>
 - 340B Program. <https://www.hrsa.gov/opa/index.html>
 - 340B Prime Vendor Program. www.340bpvp.com
 - National Association of Free and Charitable Clinics. <https://www.nafcclinics.org/find-clinic>
 - RxHope: www.RxHope.com
 - Medicare Part D. <https://www.medicare.gov/drug-coverage-part-d>
 - Health Insurance Marketplace. <https://www.healthcare.gov/marketplace/individual/>
- Journal articles:
 - Kesselheim AS, Huybrechts KF, Choudhry NK, et al. Prescription drug insurance coverage and patient health outcomes: a systematic review. *Am J Public Health* 2015;105(2):e17-e30.

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.41: Open-door policy- a window into creation, implementation, and assessment

Learning Objectives

At the end of this case, students will be able to:

- Describe public health policy and the three stages critical to this process
- Discuss the steps associated with good policy development
- Use tools to create, implement, and assess public health policies

Introduction

The needs of the public necessitate that public health leaders create policies, which are rules or plans of action meant to guide behavior and enact change. Of course, creation is only the first step of a policy's lifespan. Implementation and assessment of the policy are crucial components as well. These three general stages (creation, implementation, assessment) are critical for a successful policy. Failure in any of these stages will likely result in an unsuccessful policy, resulting in negative health outcomes and wasted money and effort.

Given the challenges presented, policymakers rely on a variety of methods and tools to create well-reasoned, successful policies. The Centers for Disease Control and Prevention (CDC) Policy Process, for example, provides standardized steps for creating a policy and consists of the following five domains:¹

1. Problem Identification: Determine the root cause of a public health problem and write a problem statement. This is the step where you decide you want to go on a policy journey.
2. Policy Analysis: Identify possible policy options and pick the one you think is best. Here, you are considering several destinations and decide between them.
3. Strategy and Policy Development: Plan how to develop, draft, and enact your policy. In this step, you are choosing the route to your destination.
4. Policy Enactment: Follow official procedures to get your policy authorized. This is when you actually depart on your journey.
5. Policy Implementation: Plan for successful policy implementation and achieve the desired outcomes. This is successfully traveling to your destination.

The CDC's Policy Analytical Framework is a supplemental tool that focuses on domains one (Problem Identification), two (Policy Analysis), and three (Strategy and Policy Development).² The Framework is especially helpful for conducting a "policy analysis," which according to the CDC, is a step-by-step process "*identifying potential policy options that could address your problem and then comparing those options to choose the most effective, efficient, and feasible one.*"³

Case

Scenario 1.41.1

You are a pharmacist working for your local health department and have been tasked with creating a new policy designed to mitigate a current public health issue. Your goal is to have a recommended policy ready for implementation. Below is a list of public health topics to select from. You may also choose a topic not included in the list.

- Substance abuse (e.g., alcohol, opioids)
- COVID-19
- Vaccinations
- Health access/insurance
- Sexual and reproductive health

- Smoking/electronic cigarettes
- HIV/AIDS
- Safe and affordable housing
- Crime
- Education
- Homelessness
- Mental health

Case Questions

1. **Problem Identification:** Using the CDC Policy Analytical Framework as a guide, describe the public health problem you are addressing in your policy. (Identify the Problem or Issue – Step 1)
2. **Policy Analysis:** Develop a policy to address this public health problem. Choose and answer two framing questions and one question from each criterion in “Table 1: Policy Analysis: Key Questions.” (Identify and Describe Policy Options – Step 2a)
3. **Policy Analysis:** What are two other viable policies (different approach, opposing viewpoint) that could be considered? Describe these “other” policies and answer the same two framing questions and criteria questions from “Table 1: Policy Analysis: Key Questions” that you answered for your policy. (Identify and Describe Policy Options – Step 2a)
4. **Policy Analysis:** Using the answers you provided in questions two and three, complete the “Table 2: Policy Analysis Table.” Compare the three policies (yours and the two “others”). What are the strengths/weaknesses of each policy? (Assess Policy Options – Step 2b)
5. **Policy Analysis:** Which policy is best and why? Utilize the “Table 2: Policy Analysis Table” to guide your decision. (Prioritize Policy Options – Step 2c)

Author Commentary

Successful public health policy can be difficult to achieve because public health is extremely complex and multi-faceted. Every public health issue has both individual-level (e.g., health beliefs) and external (e.g., environment) factors that influence it, many of which require massive buy-in, advocacy, and resources to address. Unfortunately, even when policies are built to accommodate complexity and the many determinants of the issue at hand, they may then fail because they alienate stakeholders (e.g., many citizens do not benefit directly while paying for the policy) or become too costly and unwieldy. Decision-makers must remember to include community stakeholders (e.g., those most impacted by the policies) in the decision-making process. Failing to do so will ultimately lead to ineffective policies, distrust, little buy-in, and lack of sustainability.⁴ Even further complicating the task is that policy developers themselves are often to blame for ineffective policies, due to their own biases, lack of creativity and collaboration, and/or poor reasoning.⁵

The CDC policy process and analytic framework are meant to mitigate some of these barriers and provide a sound approach to public health policy. Regardless of practice area, pharmacists are frequently asked to design, implement, and assess policies to increase the health of the public and make better use of resources.⁶

Patient Approaches and Opportunities

Pharmacists play an important role in dictating public health policy because of their unique position in the community and their medication expertise. Pharmacists can lead policy change, both within their immediate community and even at the state and federal levels. Consider, for example, the opioid epidemic. There have been many policies created to mitigate the epidemic that seek to address one of the following four critical areas: restricting opioid supply, improving prescribing practices, reducing opioid demand, and reducing harm.⁷ Pharmacists have been especially involved in a key policy aimed to reduce harm by increasing access to naloxone for opioid overdose. Efforts have been largely successful, and many states have since adopted naloxone access laws and seen their opioid-related deaths decrease by 9-10%.⁸

There are many approaches to public health policy design, implementation, and assessment. A common theme among available methods is to utilize a standardized approach (e.g., often via “steps”). The key to remember during this is that public health issues are complex. So, it would be unwise to tackle these issues in a disorganized way. Do not get frustrated if you feel that your policy is incomplete or small in scope. Rather, and more importantly, focus on the quality of the policy you create and becoming more confident in the process.

Important Resources

Related chapters of interest:

- The 'state' of things: epidemiologic comparisons across populations
- Interprofessional collaboration: transforming public health through team work
- Prescription for change: advocacy and legislation in pharmacy
- A pharmacist's obligation: advocating for change

External resources:

- Centers for Disease Control and Prevention. Introduction to policy analysis in public health. <https://www.train.org/cdctrain/course/1064819/>
- Centers for Disease Control and Prevention. CDC's policy analytical framework. <https://www.cdc.gov/policy/analysis/process/docs/CDCPolicyAnalyticalFramework.pdf>
- Centers for Disease Control and Prevention. Table 1: Policy analysis – key questions. <https://www.cdc.gov/policy/analysis/process/docs/Table1.pdf>
- Centers for Disease Control and Prevention. Table 2: Policy analysis. <https://www.cdc.gov/policy/analysis/process/docs/Table2.pdf>

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Glossary and Abbreviations

- [Glossary](#)
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1.42: PrEPare yourself- let's talk about sex

Learning Objectives

At the end of this case, students will be able to:

- Discuss the opportunity for enhanced promotion and use of preexposure prophylaxis
- Describe and apply current recommendations for the use of preexposure prophylaxis
- Identify counseling and monitoring parameters for patients taking preexposure prophylaxis

Introduction

Although significant progress has been made towards decreasing the morbidity and mortality associated with human immunodeficiency virus (HIV) infection, the HIV epidemic remains a major public health challenge.¹ In 2018, an estimated 1.2 million people were living with HIV in the United States. Of these, approximately 38,000 received new diagnoses, and an estimated 161,800 people were living with undiagnosed HIV.² People living with HIV, especially those unaware of their diagnosis or those unable to access healthcare services, may unknowingly engage in practices that increase the risk of HIV transmission to others. In 2015, approximately 1.1 million adults in the U.S. were considered at risk of becoming infected with HIV and met an indication for preexposure prophylaxis (PrEP). Yet in 2016, only about 78,000 persons filled a prescription for PrEP in the United States.³ Pharmacists have demonstrated great success with screening, initiating, and monitoring patients taking PrEP, demonstrating their potential role in this public health initiative.⁴⁻⁵

PrEP has been demonstrated to be a highly effective option for preventing the acquisition of HIV.⁶⁻¹⁰ In 2012, the Food and Drug Administration (FDA) approved the oral tablet combination of tenofovir disoproxil fumarate (TDF)-emtricitabine (FTC) (Truvada[®]) as the first medication indicated for PrEP for at-risk adults and adolescents weighing at least 35 kg. In 2019, the FDA approved the second PrEP oral tablet combination of FTC and tenofovir alafenamide (TAF) (Descovy[®]) for at-risk adults and adolescents weighing at least 35 kg, excluding individuals at risk from receptive vaginal sex.

The Centers for Disease Control and Prevention (CDC) and the US Public Health Service (USPHS) recommend daily oral PrEP with Truvada[®] for sexually active adult men who have sex with men (MSM), adult persons who inject drugs (PWID), and heterosexually active men and women at substantial risk for HIV infection.¹¹ The US Preventive Services Task Force (USPSTF) states that activities that constitute a substantial risk for HIV acquisition include having a serodiscordant sex partner (e.g., in a sexual relationship with a partner living with HIV), inconsistent use of condoms during receptive or insertive anal sex or with a partner whose HIV status is unknown and is at high risk (i.e., a PWID, a person who has a high number of sex partners, a person who engages in transactional sex or is trafficked for sex work, etc.), or having a sexually transmitted infection (STI) within the past six months. In addition, the USPSTF states that sharing used drug injection equipment represents a high-risk activity for PWID.¹²

Unfortunately, long-term use of Truvada[®] can cause serious adverse effects such as osteomalacia and renal injury, both of which are due to the TDF component of this PrEP regimen. Therefore, the 2020 recommendations by the US Panel of the International Antiviral Society state that Descovy[®] is a good option for individuals at risk for kidney dysfunction, osteopenia, or osteoporosis.¹³ Through either community practice or collaborative, direct clinical care, pharmacists can screen patients and assess PrEP eligibility prior to initiation and conduct follow-up monitoring of PrEP use to ensure the effectiveness and safety of the prophylaxis regimen.

Case

Scenario 1.42.1

You are a pharmacist working in Denver, CO, in a community pharmacy located in the inner-city that caters to patients with varying insurance coverage levels. You serve a diverse population, including representation from ethnic, sexual, and gender minorities. Your practice has a collaborative practice agreement with several neighboring physicians that allows for the delivery of various pharmacist-run clinical services, including PrEP. It affords access to pertinent patient health information, including laboratory tests.

CC: “I don’t want to get HIV.”

Patient: TC (he/him) is a 23-year-old gay cis-male living in Denver. He relocated from Brazil to the United States three years ago but moved to Denver one year ago. He overstayed his visa conditions to find steady employment and apply for graduate school. He does not have plans to return to Brazil and is picking up shift work in the local area ski resorts as much as he can for the time being.

HPI: TC’s friend recently started Truvada[®] for PrEP and encouraged him to do the same. TC was previously in a monogamous long-term relationship of one year of duration but has been single since moving to Denver. He is ‘out’ to friends and family and primarily meets partners online. Over the past three months, he has had six sexual partners and is currently not in a committed relationship. He is sexually active and participates in both insertive and receptive oral and anal intercourse. He prefers to have sex with condoms but admits that he cannot always afford to, or his partners may request that they do not use them. He states he likely has unprotected anal sex about 50% of the time and unprotected oral sex 100% of the time.

PMH:

- Shoulder injury (three months ago from skiing)
- Pharyngeal gonorrhea (successfully treated one month ago)

FH:

- Family is in Brazil and is overall in good health
- Father: 51 years old; HTN
- Mother: 50 years old; rheumatoid arthritis

SH:

- Does not use tobacco or illicit substances
- Smokes cannabis approximately once weekly
- Drinks approximately ten alcoholic drinks weekly

Medications:

- Ibuprofen 200 mg four times a day as needed
 - Currently uses 3-4 days a week for shoulder and finds it effective
- Acetaminophen 500 mg four times a day as needed
 - Currently uses 1-2 days a week for shoulder and finds it effective
- Vaccinations up to date (including Hepatitis A and B), but has not received the human papillomavirus (HPV) vaccine

Allergies: NKDA

Vitals:

- BP (sitting) 118/74 mmHg
- HR 74 bpm
- RR 16/min
- Temp 98.1°F

Relevant laboratory results From yesterday:

Test	Result	Test	Result
HIV immunoassay	Negative	SCr	0.87 mg/dL
anti-HAs	Positive	BUN	18 mg/dL
HBsAg	Negative	WBC	$8.8 \times 10^3/\mu\text{L}$
anti-HBs	Positive	Neutrophils	$6.5 \times 10^3/\mu\text{L}$
anti-HCs	Negative	RBC	$4.6 \times 10^6/\mu\text{L}$
Gonorrhea and chlamydia PCR (specimen: urine)	Negative	Hgb	15.0 g/dL
Gonorrhea and chlamydia PCR (specimen: rectal swab)	Negative	Platelets	$350 \times 10^3/\mu\text{L}$
Gonorrhea and chlamydia PCR (specimen: pharyngeal swab)	Negative		
Syphilis	Negative		

ROS:

- General: pleasant 23-year-old male
- CNS: alert, oriented, not confused
- HEENT: WNL
- Resp: no evidence of cough, no dyspnea, or wheeze
- GI: no nausea/vomiting, states one regular bowel movement daily
- GU: no blood in urine, no genital pain, pruritus, swelling, or discharge
- MSK: decreased range of motion to the right shoulder
- Skin: WNL

Surgical history: None

SDH: TC is currently not regularly employed but awaiting the next ski season to find more consistent shift work. He is presently picking up short-term cash jobs within hospitality. He is living with his friend but only minimally contributes to rent. He speaks English at a conversational level and is natively fluent in Portuguese. He studied exercise physiology at a university in São Paulo. He would like to apply to a PhD program in this field once he has money to do so.

Because TC's visa is no longer valid, he currently does not have legal immigration status in the United States and is not eligible to receive health insurance. He pays cash for medications at his local pharmacy and receives his primary care medical services at a nearby federally-qualified community health center at no cost. Although he is currently living with a friend, he meets the federal definition of sheltered homelessness because he cannot afford the cost of housing.

Additional context: Based on your state's laws and the training you have acquired, you can assess TC for his suitability PrEP and prescribe it for him if you deem it to be an appropriate choice.

Case Questions

1. Who should be assessed for the suitability of PrEP? What patient-specific risk factors may support its use in a given patient?
2. What are the current FDA-approved regimens for pre-exposure prophylaxis (PrEP)? How do indications for use differ between the two regimens? Which regimen do you recommend and prescribe for TC?
3. What monitoring is needed for patients receiving PrEP?
4. After reviewing TC's medication list, what would you advise him regarding potential drug interactions with PrEP?
5. You tell an old pharmacy school classmate about your unique collaborative community pharmacy practice which includes pharmacist-run services, such as PrEP. She tells you she is surprised you are offering PrEP services since she believes that "it just facilitates and promotes irresponsible sexual behaviors." How would you respond to her stigmatizing beliefs about PrEP?
6. TC is unable to afford to pay cash for his PrEP prescription. What are some ways he may be able to obtain PrEP?
7. TC states that he is worried he may get tired of taking daily oral PrEP. Are there non-oral PrEP options?

8. What medication adherence and harm reduction strategies can you recommend for TC?

Author Commentary

Pharmacists continue to play a large role in HIV in the community practice setting and beyond.¹⁴ Pharmacists can identify HIV risk factors, screen for patient eligibility for PrEP therapy, recommend, and in this case, initiate an appropriate PrEP regimen, screen for drug interactions, counsel patients on adherence to PrEP, improve access to PrEP for patients who are underinsured or uninsured, address PrEP-related stigma. *Primary prevention* of HIV involves screening individuals for HIV and providing comprehensive sex education on ways to avert acquisition of the virus, prevention counseling, easy access to condoms, lubricants, HIV screening, etc. *Secondary prevention* of HIV includes education of people living with HIV on ways to reduce transmission to their partner(s), engaging and encouraging those who are HIV positive to decrease risky behaviors (e.g., sex, illicit substances, etc.), and offering antiretroviral adherence counseling. One specific strategy used for education is the CDC campaign “U=U” (undetectable = un-transmittable),¹⁵ which means if a patient has an undetectable HIV viral load, that their virus is fully suppressed and the risk of HIV transmission to a partner reduced almost to zero. Key in this messaging is the benefit in maintaining a continuously suppressed viral load by taking antiretrovirals consistently and as prescribed. Finally, *tertiary prevention* focuses on the patients living with HIV, continuously improving their duration and quality of life, and reducing morbidity and mortality associated with the virus.

Patient Approaches and Opportunities

In addition to PrEP, pharmacists can offer patients other HIV prevention services, including HIV management via pharmacotherapy, monitoring and counseling, HIV testing, post-exposure prophylaxis (PEP), and harm reduction education and tools.¹⁵ Harm reduction is defined as “a set of practical strategies and ideas aimed at reducing negative consequences associated with drug use.”¹⁶ Pharmacists in various practice settings can offer patients harm reduction services to prevent HIV, including education on safe substance use, and access to sterile syringes and condoms.

It is important for pharmacists, pharmacy students, and other healthcare practitioners to avoid stigmatizing language while providing PrEP services to patients. Our choice of language and words has an impact. We can either empower or stigmatize people living with HIV.¹⁷ It is important for healthcare professionals to recognize how the social determinants of health (in this case, insurance, housing, or immigration status) can affect patient accessibility to PrEP services. Additionally, healthcare professionals providing PrEP services must routinely assess patients taking PrEP for adherence and need, as well as screen patients for STIs, changes in kidney function, risk factors (e.g., injection drug use, condom-less sex, etc.), and pregnancy status as indicated.¹¹

Important Resources

Related chapters of interest:

- [HIV and hepatitis C co-infection: a double-edged sword](#)
- [Harm reduction for people who use drugs: A life-saving opportunity](#)
- [A stigma that undermines care: opioid use disorder and treatment considerations](#)

External resources:

- Websites:
 - Centers for Disease Control and Prevention. Pre-exposure prophylaxis (PrEP). <https://www.cdc.gov/hiv/clinicians/prevention/prep.html>
 - Ready, Set, PrEP Resources. <https://www.hiv.gov/federal-response/ending-the-hiv-epidemic/prep-program-resources>
 - PleasePrEPme.org Informational Resources. <https://www.pleaseprepme.org/resources>
- Journal articles and guidelines:
 - Centers for Disease Control and Prevention: US Public Health Service: Preexposure prophylaxis for the prevention of HIV infection in the United States—2017 update: clinical providers’ supplement. 2018. <https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-provider-supplement-2017.pdf>

- US Preventive Services Task Force. Preexposure prophylaxis for the prevention of HIV Infection: U.S. Preventive Services Task Force recommendation statement. *JAMA* 2019;321(22):2203-13.
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Glossary and Abbreviations

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1.43: Unexpected souvenirs- parasitic and vector-borne infections during and after travel

Learning Objectives

At the end of this case, students will be able to:

- Identify risk factors for common parasitic and vector-borne infections in travelers
- Describe common parasitic and vector-borne infections in travelers
- List common prophylactic measures for parasitic and vector-borne infections
- Recommend appropriate treatment regimens for a patient with a parasitic infection

Introduction

Every year there are more than 700,000 deaths from parasitic and vector-borne (transmitted from mosquitos, ticks, and flies) infections. Common examples include malaria, dengue, schistosomiasis, human African trypanosomiasis, leishmaniasis, Chagas disease, yellow fever, Japanese encephalitis, and onchocerciasis.¹ The burden of these infections is highest in tropical and subtropical areas and disproportionately affects the poorest populations. Some diseases, such as Chikungunya, leishmaniasis, and lymphatic filariasis cause chronic suffering, life-long morbidity, disability, and occasional stigmatization.²⁻⁴ Vector-borne and parasitic infections can be a significant concern for international travelers of all ages.^{5,6} Up to 80% of people who travel to low-to middle-income countries may acquire a travel-related infection, making these infections relevant for healthcare professionals based in the United States as well. A lengthy list of different parasitic and vector-borne diseases is available in the Centers for Disease Control and Prevention (CDC) Yellow Book,⁵ as well as the World Health Organization (WHO) resources on vector-borne diseases.⁷

Specific vectors and parasites may be endemic in certain regions based on climate and the availability of filtered water and proper sewage systems. Variability of the climate may result in vector/pathogen adaptations and expansions impacting vector-host interaction, host immunity, and the evolution of these pathogens. According to the WHO, factors such as the lack of source control can be a factor in enhancing the risk of vector-borne infections, including poorly designed irrigation and water systems, poor waste disposal, and water storage.⁷ Additionally, factors that impact the usage of land such as deforestation and loss of biodiversity can contribute to the potential risks. Beyond these factors, socioeconomic/cultural factors, practices regarding pest control, and access to healthcare can influence the prevalence of these diseases.^{5,7} Parasites can often be ingested through contact with contaminated water (e.g., swimming pools/recreational water) or through consuming contaminated food.⁵

Basic prevention strategies for parasitic infections include maintaining appropriate hygiene, including the frequent washing of hands when handling, preparing and eat food, and after using the bathroom. When water is not an option, hand sanitizers with greater than 60% alcohol content can substitute. Adjustments in diet may also be recommended to lessen exposure, such as only using bottled water (for drinking as well as brushing teeth) and only consuming foods cooked to recommended internal temperatures (avoiding raw produce which may have been exposed to unsafe water). For prevention of vector-borne illness, the use of insect repellents endorsed by the Environmental Protection Agency (EPA) is recommended,^{8,9} as well as the use of protective clothing and barriers (e.g. long-sleeved shirts, long pants, treated clothing and gear). Patients can be counseled to stay in indoor, air-conditioned areas as much as possible to reduce risk, and when available, to stay where screens (without holes) are present on windows/doors. When screens are not available, patients should be counseled to sleep under a mosquito net (which can be purchased prior to travel) that is WHO Pesticide Evaluation Scheme (WHOPES)-approved and long enough to tuck under mattresses; permethrin-treated nets can provide additional protection.^{5,8,9}

Case

Scenario 1.43.1

You are a clinical pharmacist in a travel health clinic that is affiliated with a local healthcare system. You are seeing the patient through a collaborative practice agreement with the physicians at your clinic.

CC: “I am traveling to Peru this summer and want to make sure I have the vaccines I need.”

HPI: FP is a 35-year-old woman who presents to the clinic. She is traveling abroad and seeks your advice related to vaccines and prevention or prophylactic strategies for parasitic and vector-borne infections during her upcoming international trip.

PMH: Asthma (controlled); allergies (seasonal)

FH: Non-contributory

SH:

- Never smoked
- No history of illicit drug use
- Consumes alcohol occasionally in a social setting

ROS: No complaints today

Medications:

- Fluticasone/salmeterol 100/50 mcg one puff twice daily
- Fexofenadine 180 mg once daily

Allergies: NKDA; seasonal allergies to pollen

Vaccinations:

- Up to date on all her childhood immunizations
- Received Vivotif nine and two years ago before traveling to India
- Received Hepatitis A and yellow fever vaccines nine years ago before traveling to Egypt
- Receives an influenza vaccine yearly and PPSV23 pneumococcal vaccine 11 years ago

SDH: FP and her partner (MS) are traveling to Peru together for three weeks this summer. MS was born in Peru and moved to the United States as a teenager, with her family. FP was born in the United States and has traveled to several countries outside of the United States but not to Peru. FP works as a history professor for a university, while MS is an emergency medical technician. They do not have any children. MS does not believe she needs any vaccinations or prophylaxis because she was born in Peru and does not expect to acquire any infections there.

Case Questions

1. What vaccinations do you recommend for FP today?
2. Does FP need any malaria prophylaxis while in Peru? If so, what will you recommend?
3. Should you ask that FP's partner MS also makes an appointment? Why or why not?
4. What non-pharmacological travel health recommendations are reasonable to recommend to FP and MS?
5. What other counseling should you provide on medications as well as travel safety?

Author Commentary

Pharmacists have a vital role in patient education, disease prevention, and public health because of their unique position to educate patients and provide vaccines, as well as antimicrobial travel prophylaxis. Pharmacies may be more readily accessible

to patients than clinics or health departments. With more people traveling for pleasure, business, or volunteer work, there is a greater need for accessible travel health information.

Pharmacists are also responsible for preparing and dispensing prophylaxis and treatment of parasitic infections to patients. It is important for the pharmacist to recognize which agents are preferred, and which may be contraindicated in certain patients (e.g., children). They will also need to provide counseling on the proper use of medications, including how they should be taken or applied and any side effects the patient should expect. Pharmacists in community pharmacies are in a unique position to talk to their patients at the time of prescription request or pick-up. If a patient were to ask for an override from their insurance because they are traveling, the pharmacist would be able to talk to the patient about their travel plans and travel health on the spot. They could schedule vaccines, contact providers (if necessary) to ask for prescriptions, and discuss over-the-counter (OTC) considerations like insect repellent. In addition, pharmacists who work in facilities where they have collaborative practice privileges or prescribing authority can schedule visits with patients themselves. This, again, makes it easier for patients to see someone prior to travel in the case that it takes longer to make an appointment with their primary care physician.

Patient Approaches and Opportunities

Pharmacists are uniquely positioned to educate travelers about diseases endemic to areas they plan to visit. Vaccines, OTC and prescription-based products, and non-pharmacological strategies for prevention should be discussed. Insurance coverage of some pharmacological therapies may be variable and should be discussed with patients. Other factors such as side effect tolerability and the ability to adhere to the dosage duration should be considered. Behavioral strategies to lessen the potential for vector bites should be stressed,⁶ and patients should be instructed on what products need to be bought in advance and what factors should be considered when selecting travel accommodations.^{1,5,7} Clinicians should encourage patients to avoid uncooked and undercooked foods and unfiltered water.¹

Pharmacists' care opportunities in vector-borne and parasite illness are not limited to pre-trip prophylaxis. Upon return from travel, patients may seek guidance from pharmacists in the community setting for selection of OTC products for new onset or mild symptom management. Alongside open-ended questions to obtain information about symptoms, pharmacists should inquire about recent travel to fully understand the potential differential. For patients who have traveled, trip details such as types of areas the patient visited (urban vs rural), the nature of accommodations/modes of transportation, food/beverage consumption, recreational activities, sexual activity, and tattoos or piercings acquired during travel are important.

Important Resources

Related chapters of interest:

- [Ethical decision-making in global health: when cultures clash](#)
- [The cough heard 'round the world: working with tuberculosis](#)
- [Sex education: counseling patients from various cultural backgrounds](#)

External resources:

- Centers for Disease Control and Prevention. CDC Yellow Book 2020: Health information for international travel. New York: Oxford University Press; 2017. <https://wwwnc.cdc.gov/travel/page/2020-yellow-book-about>
- Centers for Disease Control and Prevention. Traveler's health: vaccines, medicines, advice. <https://wwwnc.cdc.gov/travel>

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[food-and-water-precautions](#). Accessed March 9, 2021.

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.44: You say medication, I say meditation- effectively caring for diverse populations

Learning Objectives

At the end of this case, students will be able to:

- Explain how systemic racism can affect patients
- Discuss the role of culture in health beliefs, behaviors, and practices
- Identify methods to elicit patients' health beliefs and practices during an encounter

Introduction

The Census Bureau projects that the US population will become considerably more diverse over the next two decades. By 2044, half of Americans will belong to an ethnic minority group, with one in five persons being foreign-born not too long after.¹ Despite this, the healthcare system in the United States continues to be inadequate in the provision of care to persons of color because it has been infiltrated by the brutality of slavery and the persistence of systemic racism. Throughout US history, advances in medicine have relied upon the use of slaves and Black bodies.² Infamous experiences such as those of the Tuskegee syphilis study participants and Henrietta Lacks are notable cases of racism. The actions of the healthcare professionals in these, and many other cases has led to the erosion of trust in healthcare professionals as well as the healthcare system. Systemic racism leads to negative outcomes for persons of color, such as less access to preventive care, poor management of pain and increased rates of maternal mortality.³⁻⁵ Patients of color have responded by seeking healthcare professionals with similar backgrounds as theirs, if available. If suitable options are not available, patients may opt to minimize their interactions with the healthcare system, leading to negative outcomes such as non-adherence to provider visits and medication, as well as an overall decrease in health-seeking behavior. As a result, the burden of health disparities on the US healthcare system continues to be a significant issue.

As the US population increases in terms of racial and ethnic diversity, the likelihood that healthcare professionals, including pharmacists, will encounter patients whose health beliefs, practices, and behaviors are different from their own or those customarily accepted in the United States will also increase.⁶ These health beliefs, practices, and behaviors are guided by the culture to which a patient identifies. Culture is defined as the *"integrated pattern of human behaviors that includes thoughts, communications, languages, practices, beliefs, values, customs, courtesies, rituals, manners of interacting and roles, relationships and expected behaviors of a racial, ethnic, religious or social group; and the ability to transmit the above to succeeding generations."*⁷ As such, culture may affect how a patient perceives their health, what a patient believes causes their illness, how the illness is experienced, who a patient seeks out for care, who makes health decisions in the patient's family, and the patient's treatment preferences. For example, pharmacists may encounter patients from cultures that use alternative medicine and healers in combination with or in lieu of Western medicine, while men make health decisions and extended family play an integral role in the care of loved ones in other cultures.⁸ Consequently, in addition to the culture of medicine, pharmacists must understand, appreciate, and take into consideration the cultural diversity of their patients in order to effectively care for a population that is becoming more racially and ethnically diverse.⁹ It is understandable that there will be instances where evidence-based medicine conflicts with culturally-competent care as the former seeks to standardize health care for all while the latter emphasizes the importance of caring for patients as unique individuals.¹⁰ What is important to note, however, is that evidence-based medicine and culturally-competent care can co-exist when the patient is proactively included in discussions about their care, their health beliefs and practices are elicited and respected, and there is clear and honest dialogue between the patient and the pharmacist.

Culture also plays an important role in the way we communicate and awareness of cross-cultural communication models can improve patient care outcomes.¹¹ This understanding requires a pharmacist to address barriers to effective communication that can arise during a patient encounter, which includes lack of knowledge about cultural differences, fear and distrust of others, stereotyping groups of people, and poor non-verbal communication/active listening skills (e.g., lack of eye contact [if culturally appropriate], dismissing patients with limited English proficiency). These barriers, if left unchecked, can impact a pharmacist's ability to provide culturally sensitive care and further perpetuate inequitable care to already disadvantaged populations.¹²

Gaining knowledge of various cross-cultural models/tools that exist to enhance effective communication can provide strategies to cultivate genuine and culturally sensitive relationships with our patients. For example, the LEARN model is used to build trust, and allow for the pharmacist to negotiate a care plan with the patient, while the SOLER model can be used to promote active listening and establish an empathetic, respectful relationship with the patient.^{13,14} Psychiatrist and anthropologist Arthur Kleinman created a series of open-ended questions that also can be used to gain insight into the patient's worldview, lived experience, social context, and spirituality as it relates to their illness.¹⁵ These questions can be used in a respondent-driven interview approach for the pharmacist to better understand the patient's perspective by asking "what kind of treatment do you think is necessary?" "what do you fear most about your illness?" or "what are the most important results you hope to receive from this treatment?"

Case

Scenario 1.44.1

You were recently hired as a pharmacist with transition of care responsibilities in a small, rural hospital. Today, you are shadowing another pharmacist providing discharge counseling.

CC: "My mother is leaving the hospital today."

Patient: KS is a 62-year-old Hispanic female. She is being discharged from the hospital after recovering from DKA.

PMH: T2DM (diagnosed during this admission)

Medications:

- No history of prescription medication for any medical condition prior to admission
- Initiated on insulin glargine 10 units subcutaneously every evening during admission

Additional context: Upon entering the room with the pharmacist, you note that KS appears well rested and in a good mood. Present in the room with KS are two adult women, an adult man, and a small child. They were in town to visit KS when she was admitted to the hospital. The pharmacist introduces themselves to KS and those present with her and asks permission to initiate the counseling session. KS looks to one of the women (RA), who states "Please do." While discussing the insulin prescription, you notice that KS has remained quiet and frequently glances at RA. The adults appear uncomfortable.

Interaction:

- **Pharmacist:** "KS, do you have any questions about your insulin prescription?"
- **RA:** "My mother primarily speaks Spanish. We asked one of the nurses if someone who spoke Spanish could meet with us but were told there are no Spanish-speaking providers at this hospital."
- **Pharmacist:** "Your mother? Oh...um. I didn't realize you were related." *RA has darker skin compared to KS.* "I noticed that you and your family seem a bit confused about the insulin prescription. Don't worry...your mother will get used to giving herself injections. It's pretty easy. Or you and your husband can help her!" *The pharmacist then turns to the male present in the room.* "You can help your mother-in-law and wife, right?"
- **RA:** "He's not my husband; he's my brother. SHE [pointing at the other adult female in the room] is my wife, and we are my mother's primary caregivers. We need to talk to a curandera first..."
- **Pharmacist (interrupting RA):** "Oh, please excuse me. I am so sorry. I thought he was your husband. Um, here is a medication guide with pictures that explains how to inject your insulin. This may make you all feel more comfortable with giving the injection. I give this pamphlet to all my patients who are started on insulin for the first time. It is a really effective treatment for diabetes."
- **RA:** "As I was trying to say, we need to speak with a curandera first before my mother can take this medication. Our family believes in spiritual and natural ways of healing the body. Does the hospital have a curandera or someone who specializes in spiritual healing that can meet with us? If you have copies of the pamphlet in Spanish, that will allow my mother to familiarize herself with the medication...just in case we decide later that she needs to use the insulin."
- *While the pharmacist makes a phone call, you overhear RA tell her wife, "The people in this pamphlet don't even look like us. There's never anyone who looks like us in these health brochures...unless it's something negative. It's like these brochures are only designed with a certain group of people in mind. Ha! Unless we are talking about that stop smoking poster of course [RA points to a poster on a nearby wall in the room]."*
- **Pharmacist:** "I just learned that we only have the pamphlets in English. Although we do not have a curandera in our hospital,

we do have a chaplain who is Christian. He is great. Let me contact him for you.”

- **RA:** “I think we’ll just take the prescription and try to find help for our mother elsewhere. Thank you.”

Case Questions

1. What instances of systemic racism are present in this situation?
2. How could these instances of systemic racism impact KS in terms of her care and wellbeing?
3. What cross-cultural conflicts or issues can you identify between the pharmacist and KS/the family (e.g., communication, assumptions)?
4. How could the pharmacist have interacted with KS and her family more effectively?
5. What methods could be used by the pharmacist to explore the role of the family during this encounter?
6. What strategies could the pharmacist have used to elicit the patient’s health beliefs/practices?

Author Commentary

As pharmacists, it is essential to keep cultural diversity at the forefront of each patient encounter. Doing so will allow us to effectively and appropriately interact with, treat, and provide care for our patients as individuals, and not as members of a group to which we have unconsciously (or consciously) assigned stereotypes, biases, or generalizations. It is important that pharmacists remember that our own health beliefs, practices, and behaviors are rooted in the culture(s) to which we belong, including the culture of medicine and/or a historically dominant culture in the United States. Because these cultures may be unfamiliar to, different from, or create conflict with those of our patients, pharmacists need to be conscious of institutional policies, practices, and cues in our healthcare settings that may prevent all of our patients from fully engaging in the healthcare system and receiving culturally-responsive care.

Patient Approaches and Opportunities

While most discriminatory behavior by healthcare professionals is not subjectively experienced as intentional, the impact of such behavior contributes to racial disparities in healthcare.¹⁶ As pharmacists, we need to consistently ask ourselves “*What is my personal interpretation of assigned value based on how someone looks, acts, or presents themselves and how is this rooted in my own bias?*” Our goal must always be to get to know our patients as people at the start of every encounter and do the same for whomever is with them. Treating patients with mutual respect requires that we treat them as *they* would want to be treated, not as we would want to be treated. We need to be diligent and consistently evaluate our environments for institutional policies and practices that perpetuate systemic racism and negative stereotypes of patients.

Important Resources

Related chapters of interest:

- [Ethical decision-making in global health: when cultures clash](#)
- [Saying what you mean doesn’t always mean what you say: cross-cultural communication](#)
- [Experiences of a Caribbean immigrant: going beyond clinical care](#)
- [The great undoing: a multigenerational journey from systemic racism to social determinants of health](#)

External resources:

- Websites:
 - Georgetown University. National Center for Cultural Competence. <https://nccc.georgetown.edu/>
 - Agency for Healthcare Research and Quality. Health literacy universal precautions toolkit 2nd edition. Consider culture, customs, and beliefs: tool #10. <https://www.ahrq.gov/health-literacy/improve/precautions/tool10.html>
 - Transcultural C.A.R.E Associates. <http://transculturalcare.net/>
 - Belonging Begins With Us. <https://belongingbeginswithus.org/>
- Journal articles:
 - Arya V, Butler L, Leal S, Maine L, Alvarez N, et al. Systemic racism: pharmacists’ role and responsibility. *J Am Pharm Assoc* 2020;60(6):e43-e46.

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.45: The Sustainable Development Goals and pharmacy practice- a blueprint for health

Learning Objectives

At the end of this case, students will be able to:

- Recognize the impact of the SDGs on patient care
- Discuss the relationship between the SDGs and the role of the pharmacists in patient care and achieving public health goals
- Examine the role of SDGs and their targets in specific patient case scenarios

Introduction

In 2015, the Sustainable Development Goals (SDGs) were established and adopted by all United Nations (UN) Member States as part of the 2030 Agenda for Sustainable Development.¹ The SDGs consist of 17 main goals, each with multiple specified targets, were developed based on decades of previous global health work by individual countries and the UN, including the Millennium Development Goals.² They serve as a blueprint for global health, recognizing that tackling problems in climate change, education, inequality, and economic growth are important and go hand in hand with directly tackling problems in improving health.

The 17 goals consist of: (1) no poverty, (2) zero hunger, (3) good health and well-being, (4) quality education, (5) gender equality, (6) clean water and sanitation, (7) affordable and clean energy, (8) decent work and economic growth, (9) industry, innovation and infrastructure, (10) reduced inequalities, (11) sustainable cities and communities, (12) responsible consumption and production, (13) climate action, (14) life below water, (15) life on land, (16) peace, justice and strong institutions, and (17) partnerships to achieve the goals.² Together, the 17 SDGs have 169 targets to achieve by 2030.²

The SDGs cover a broad range of topic areas, and in many instances, the goals and their targets may seem unrelated to what a pharmacist does on a daily basis. Despite this, a closer look at the relationships between the SDGs and the role of pharmacists in patient care will show that achieving public health goals do impact the patients that pharmacists interact with and are more intricately related than it may have first seemed. For example, SDG 6 focuses on clean water and sanitation, which from a bird's eye view does not seem like it has to do with pharmacist direct patient care. However, understanding that lack of access to drinking water may prevent patients from being able to take their pills, and poor sanitation may result in infectious diseases that pharmacists will then have to work with physicians to treat. Additionally, SDG goals focused on economic growth such as SDG 8 (decent work and economic growth) can also be relevant to direct patient care because without employment and a means to make an income, patients often cannot afford medications that they need, resulting in uncontrolled disease states. Although only one of the SDGs directly addressed good health and well-being, many of the SDGs can influence how our patients present and what we can do to help them with their care.

Case

Scenario 1.45.1

You are on an international APPE rotation providing medication therapy management (MTM) services alongside your preceptor in a rural village just outside the main city capital in a country in Southeast Asia. You are present as a student observer to learn more about how medications are managed for patients in this different cultural setting.

CC: "She says she's here to begin medication services."

Patient: DS is a 42-year-old Indian female (65 in, 82 kg) who was referred to you for MTM services. Her T2DM and asthma have been uncontrolled for many years, and the physicians are concerned about her worsening microvascular complications from persistently high sugars. Since her physicians were educated about pharmacist services, they have asked the pharmacist at the

clinic to try and help manage her medications to better control her chronic diseases.

HPI: DS does not speak English and you are provided with a student translator to be able to understand the discussion during the visit. She does not have insurance and pays for everything out of pocket, with permission from her husband.

PMH: T2DM (for eight years); asthma (since age 10); PTSD (unknown duration)

FH: Unknown; she left her family at a young age in an arranged marriage and has not spoken to her parents since age eight.

SH:

- Denies alcohol or tobacco use
- Denies illicit drug use

Medications:

- Metformin 1000 mg BID
- Glipizide 10 mg daily
- Insulin glargine 25 units subcutaneously nightly
- Albuterol HFA 90 mcg inhaler 1-2 puffs every 4-6 hours as needed

Allergies: NKDA

Vitals: POC glucose at today's visit 342 mg/dL

Labs:

- HgbA1c from 15 months ago 10.2%
- No other labs available due to limited resources for lab work in the clinic

ROS: Not performed at this visit

Surgical history: C-section delivery of 3rd child (five years ago)

SDH: DS has been married since the age of eight and lives in a rural village with limited clean water and electricity. Her family is very poor. She is a pescatarian with a diet that consists mainly of bread, beans, and any fish available, but since good fish from the market is expensive, she pays less for fish that locals catch from nearby streams and lakes, sometimes eating it without fully knowing what kind of fish it is. Her village is highly polluted mainly because there is no running water, no proper sanitation system for bathroom use, and air pollution from the main city reaches their small village leaving little clean air for breathing.

Additional context: Before the visit, you are informed by her physician that DS lives in an abusive marriage but since she has no means to provide for herself or her children, she continues to live at home with no intention of leaving her husband. Her husband has tight control over everything she does, and also keeps a close eye on what medications she is taking on a daily basis. She is not able to do much without being watched and if she is caught doing something her husband does not agree with, she is often physically and verbally abused.

Case Questions

Use the following website to assist in answer the following case questions: <https://sdgs.un.org/>

1. The pharmacist begins by asking DS questions about her diabetes medications. She reports compliance on all her oral medications, but states she only takes her insulin sometimes. Upon further questioning, it is revealed that her home does not have running electricity, and she was taught that if it gets hot in her home, she must throw her insulin out. Her husband only gives her money to buy insulin once every three months, so after she disposes of it, she does not get another one for a while. What SDG(s) is/are related to this problem and achieving which SDG targets within this goal could help prevent this problem in the future?
2. The pharmacist finds some pamphlets on lifestyle changes that can be helpful in controlling diabetes and provide them to DS to help her learn about diet and exercise recommendations. Upon receiving them, she states she never learned to read or write and hands the pamphlets back. What SDG(s) is/are related to this problem and achieving which SDG targets within

this goal could help prevent this problem in the future?

3. The pharmacist asks about DS's PTSD and if she has ever taken anything for it. She states she has had it for a while and thinks it is because of the violence in her marriage. However, her husband does not believe there is anything wrong and will not allow her to take medications for a problem that "does not exist". What SDG(s) is/are related to this problem and achieving which SDG targets within this goal could help prevent this problem in the future?
4. At the end of the visit, the pharmacist asks DS if she has any questions about her medications. She states that all three of her children seem to have some learning deficits and is not sure why. She wants to know if there was any medication that they can be given. The pharmacist proceeds to discuss this with the physician since this is out of her scope of practice. The physician states that she has asked this question many times, but the answer is always no, there aren't any medications that can be given. He proceeds to say that although there could be multiple causes, he thinks one main problem is that she is eating fish from bodies of water that are highly polluted with toxins such as Polychlorinated biphenyls (PCB), which could be causing harm to her children when she is pregnant. What SDG(s) is/are related to this problem and achieving which SDG targets within this goal could help prevent this problem in the future?
5. What barriers now exist for managing this patient's health conditions because above mentioned SDG goals have not been met?
6. Which targets in SDG3 relate directly to the care you are trying to provide for DS?
7. Recognizing the important role that SDG's can play on patient care, what solutions (policies, programs, etc.) can you think of that may help to achieve any one or multiple of the SDG's? Brainstorm a list and think about the applicability of these solutions to different countries around the world.
8. In many instances, the best way to find solutions is to engage directly with the community you are trying to help. In what ways would you want to do this? Describe community engagement initiatives you would want to initiate to help advance an SDG or SDG target.
9. Although it is important to understand how public health problems that are being tackled in the SDGs can directly impact patient care, there is also an ethical component that is important to recognize. What ethical problems do you note in this case and what do you think is the best way to tackle these issues?

Author Commentary

The SDGs represent a unified, worldwide front on tackling some of the world's greatest public health challenges. As pharmacists, our direct patient care interactions in high-income countries may seem to have little to do with many of the SDGs and their targets, but it is imperative to realize that many of these goals are related to social determinants of health and impact how patients present to us as well as what barriers they have managing their own health.

Pharmacists and student pharmacists can and should be a part of the larger initiative to improve public health, particularly in reaching targets in SDG 3 (Good health and well-being: Ensure healthy lives and promote well-being for all at all ages), through patient education and being part of policy development in our country. Even though the SDGs and their targets are applicable across the world (and often may seem to be more important for developing countries), it is vital to recognize that public health efforts are needed everywhere, including the US, and particularly for populations who live in socioeconomically disadvantaged areas. The concept of local is global is very applicable as we aim and work to be part of the solution in attaining the targets set out in the SDGs.

Patient Approaches and Opportunities

SDGs should play a critical role in our approach to the provision of patient care across cultures and locations. It is imperative that pharmacists are aware of the various aspects of a patient's life including social determinants of health that play a pivotal role in patient care, treatment, and ultimately health outcomes. Pharmacists have a duty to provide culturally respectful care, free from bias and saviorism. Pharmacists and pharmacy students should engage in cultural competency training and personal reflection to ensure they are not projecting unrecognized biases onto patients. Pharmacists should take advantage of opportunities to better understand the impact of culture and community on patient treatment through direct patient communication as well as immersion in the community wherever possible.

Finding ways to combat barriers to care – including cultural and socioeconomic barriers – is critical to improving health outcomes. For instance, when working with patients in which you are not able to communicate due to language barriers, you should consider the use of medical translation services to ensure both you and the patient are able to express and receive information adequately. Being inclusive of dietary restrictions and access to food, among many other considerations, impacts the recommendations pharmacists may provide to our patients. However, it is important to remember, we may not be able to ascertain all the information we may deem necessary, so it is important to make the most informed decision (shared between

patient and healthcare professional) possible given the information provided.

Important Resources

Related chapters of interest:

- [Ethical decision-making in global health: when cultures clash](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [Sex education: counseling patients from various cultural backgrounds](#)

External resources:

- United Nations Sustainable Development Goals. <https://sdgs.un.org/>
- International Pharmaceutical Federation, Advancing the global pharmaceutical workforce towards achieving universal health coverage and the UN Sustainable Development Goals. https://www.fip.org/www/streamfile.php?filename=fip/PharmacyEducation/2017/WHA_2017.pdf

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2. United Nations. The 17 goals. <https://sdgs.un.org/goals>. Accessed December 4, 2020.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.46: Experiences of a Caribbean immigrant- going beyond clinical care

Learning Objectives

At the end of this case, students will be able to:

- Discuss the roots of racism in the US and how systemic racism presents
- Distinguish between a health disparity and a difference in health status
- Discuss how systemic racism contributes to health disparities

Introduction

Racism is a multidimensional construct that infiltrates every aspect of life in the United States.¹ Its basic principles involve the subordination and discrimination of one racial group by another, with race used to determine superiority. The origins, history and evolution of the United States is rooted in racism, which presents as the favored group (white persons) acquiring and having access to more resources and power.

The United States is founded on a harsh and violent history, including the stealing of Native American land, followed by centuries of oppression of Africans through their labor on this stolen land.² These are only a few of the events which are the source of the debates surrounding the phrase “all men are created equal,” found within the US Declaration of Independence. Since its adoption in 1776, there has been much debate about the meaning of ‘all men.’ The simplest of arguments infer that this equality excludes women, African Americans, indigenous people, and other persons of color. Since this time, American history has demonstrated that not all men are created equal, with a preference for white persons while all others have been traditionally oppressed. This oppression is still present today throughout all institutions and is considered the most complex form of racism, systemic racism.^{1,2} This level of racism is evidenced by systems which favor the majority and dominant white culture. Persons belonging to the majority hold the power, and thus can create the regulations, policies and procedures governing all of society’s institutions, which are reflective of their beliefs and biases. Freedom and equality are not enjoyed by all, and despite hundreds of years of US evolution, this inequality for certain groups has remained.

One major example of systemic racism is depicted by the practice of redlining by mortgage lenders. Pursuant to the Great Depression, several federal policies were put in place in the 1930s in an attempt to ‘right’ the housing market by preventing foreclosures and assisting with housing for those who lost their homes.³ The Home Owners Loan Corporation was created for this, controlling mortgage risk by implementing a system of property appraisals. Neighborhoods were graded on attributes such as area quality and population composition. As a result, neighborhoods with all forms of minority populations were graded lower than others, and these grades were used by financial institutions to determine loan eligibility. This led to the systematic denial of loans to persons of color. Despite the illegality of redlining today, it has majorly contributed to the long-term disenfranchisement of historically poorly graded neighborhoods.

Education is another sector of society where outcomes are significantly impacted by systemic racism. Persons of color experience many barriers that impede their success in their pursuit of education. From as early as kindergarten, Black students have a higher likelihood of suspension in comparison to white students.^{4,5} This is thought to be because of the trend of suspicion of guilt (e.g., darker skin tone is associated with perceptions of evil) which Black persons face throughout all aspects of their lives.⁶ On a more pervasive level, schools enrolled with mainly students of color are typically underfunded and have less resources.⁷ Access to less resources also leads to students in these groups having to take on more debt when pursuing higher levels of education. All these barriers and more work together to result in lower graduation rates for students of color at all levels in comparison to white students.

The effects of systemic racism are also experienced in healthcare. One of these effects is the presentation of health disparities, which are more than differences in health status when comparing one group to another. A disparity is a direct result of a social disadvantage, with resulting differences in health status that could have been prevented, and therefore, are unjust.⁸ For instance, lack of appropriate training of healthcare professionals fails to prepare them to adequately assess and manage occurrences

of pain reported by Black patients. This leads to Black patients with similar conditions as white patients being less likely to receive pain medications.^{9,10} Furthermore, common stereotypes still persist, such as Black patients having thicker skin and nerve endings, giving them higher pain thresholds.¹¹ Cultural competency training to promote life-long cultural humility is not mandatory for most healthcare professions programs. As a result, providers are not equipped or able to interact with patients belonging to under-represented groups in a culturally sensitive manner. This in turn leads to patients not trusting their healthcare professionals, which then leads to non-adherence to their respective therapy.^{12,13}

As one of the most trusted professions, pharmacists have a duty to include strategies while caring for patients which may help lessen the impact of systemic racism and the resulting health disparities. They should be part of the solution as opposed to contributing to the problem. Consider that lack of cultural competence, as well as implicit and explicit biases in providers, help perpetuate systemic racism. It is up to pharmacists to work together with other healthcare professionals to make experiences within the healthcare system for patients of color, in the very least, survivable.

Case

Scenario 1.46.1

You are a clinical pharmacist working on an interdisciplinary healthcare team in an infectious disease clinic.

CC: “I’m here for a follow-up with my caseworker and to sort out my medication.”

Patient: JS is a 70-year-old female immigrant (65 in, 68 kg) from the Caribbean.

HPI: She contracted HIV from her (now deceased) husband of 45 years. According to JS, she was first diagnosed with HIV in her home country in her early thirties but only started antiretroviral therapy when she became a US resident. JS initially sought therapy for her condition when her husband became gravely ill one year prior to his death.

PMH: HIV; osteoarthritis; hypercholesterolemia

FH:

- Husband: (deceased, AIDS); T2DM, dyslipidemia
- Mother: (deceased, breast cancer); T1DM
- Father: alive; T2DM, arthritis, hypercholesterolemia
- Son: alive
- Daughter: alive; asthma

SH: No alcohol, tobacco, or illicit drug use

ROS: JS reports no major change since her last visit six months ago. The only complaint she has is that her joints are “extra stiff” now with the colder weather. She reports that she remembers to take her HIV medication as scheduled because she knows how important it is.

Vitals:

- BP 110/70 mmHg
- HR 70 bpm
- RR 18/min
- Temp 97.9°F

Medications:

- Atorvastatin 10 mg once daily
- Dovato 1 tablet once daily
- Acetaminophen 650 mg every 4-6 hours PRN pain

Additional context: While catching up with JS, you learn that she is transferring herself out of the health system where you

manage her. She mentions that she has finally found an HIV specialist who is from the same island that she is from. The new HIV specialist is farther from where she lives, but she is willing to commute the additional 45 minutes. JS states that she is only presenting to your clinic today to see the Caribbean case worker, and because she would like you to transfer her cholesterol medications to her new pharmacy.

You decide to have a deeper conversation with JS since this may be the last time you have the opportunity. At your clinic, patients with HIV usually have their follow-up visits scheduled for every two to three months. However, JS has been classified as a patient who is non-compliant with regards to clinic visits. This non-compliance has led to JS having challenges adhering to her antiretroviral therapy. Through your conversation with JS, you learn that she has always been uncomfortable accessing healthcare in your health system. Her mother, who died of breast cancer 10 years ago, visited one of the oncologists here. In her opinion, her mother's pain and discomfort were never managed appropriately. According to JS, the oncologist rebuked her mother for seeking alternative means of pain management. She also watched as her mother agonized and begged for more pain relief in her final days. These pleas were largely ignored.

JS also shares that both of her daughters had pregnancies that were "touch and go." She continues to tell you that for her eldest daughter's first child, the OB-GYN was not very knowledgeable of and sensitive towards their cultural background. Their breakdown in communication led to many delivery complications, which almost resulted in her daughter's death. As a result, her daughter sought out an OB-GYN from the Caribbean for her second pregnancy, which had a more favorable delivery. To end your conversation, JS remarks, "Besides most people here don't look and sound like me."

Case Questions

1. What specific experiences did JS and her family have that contributed to them seeking only providers who shared their cultural background?
2. JS' daughter experienced complications during her first pregnancy that were near fatal. Which groups of women in the United States have the highest rates of maternal morbidity and mortality?
3. How does systemic racism frame the experiences of this patient and her family?
4. How has systemic racism contributed to the health disparities experienced by JS?
5. How can pharmacists provide care to patients with a background like JS?
6. Within the normal scope of transitioning care, what are some highlights worth mentioning to JS' new HIV healthcare team?
7. How can pharmacists help decrease the occurrence of systemic racism in our healthcare system?

Author Commentary

One of the most important takeaways about systemic racism is that it is pervasive throughout all institutions. For this type of racism to still be having an impact on certain groups of patients over so many centuries, means that it is actively being maintained and supported, most often by the complicity of those who benefit from it. For professionals within healthcare, we can simplify the definition of systemic racism by looking at its impact on our patients. It is important to acknowledge that there is a basic mechanism of action at play here, where one group has access to all levels of power, using their status as leverage and to disadvantage other groups with little to no power. Over time, the face of systemic racism may change but its goal of maintaining power and advantage over one group never does.

The presentation of health disparities, which affect specific patient groups, is only one of the adverse effects of systemic racism in healthcare. Pharmacists, along with other healthcare professionals, must act together to champion systemic change. Therefore, it is essential to recognize that systemic racism is a public health issue, acknowledge that healthcare disparities exist, and understand the role that implicit and explicit bias and cultural competence plays when being an advocate for patients.

Patient Approaches and Opportunities

Individuals who do not identify as a person of a color must become allies (someone who belongs to the majority but is willing to use their privilege and power to fight alongside persons belonging to the disadvantaged groups, and support actions of change). To achieve this, one of the first things that must occur is listening and realizing the truth in what you are being told. Even if one does not engage in individual racist acts, there are advantages and privileges throughout society and different institutions that they receive as a member of the majority.

Allyship has a place in patient interactions as well. Pharmacists can enact change by becoming an advocate. Trust is important

for patients of color and a basic essential of any successful relationship (professional or personal). Accordingly, pharmacists should strive to become a long-term partner of their patients by gaining their trust and getting to know them on a holistic level. For instance, when considering the SDH/SDOH alone, one must acknowledge that there are many layers of factors at play when a patient pursues healthcare that may in turn affect their health outcomes. Understanding and being empathetic towards the different barriers a patient may be experiencing in their healthcare pursuit is likely one of the simplest actions that can be taken as a pharmacist to start effecting change in our healthcare system.

Important Resources

Related chapters of interest:

- [Communicating health information: hidden barriers and practical approaches.](#)
- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Plant now, harvest later: services for rural underserved patients](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [You say medication, I say meditation: effectively caring for diverse populations](#)
- [Equity for all: providing accessible healthcare for patients living with disabilities](#)
- [Expanding the pharmacists' role: assessing mental health and suicide](#)
- [The great undoing: a multigenerational journey from systemic racism to social determinants of health](#)

External resources:

- Websites:
 - Harvard University. Project Implicit. <https://implicit.harvard.edu/implicit/takeatest.html>
 - Transcultural C.A.R.E. Associates. Transcultural care. <http://transculturalcare.net/>
 - African American Wellness Project. <https://aawellnessproject.org/>
 - Coates T. The Atlantic. The case for reparations. <https://www.theatlantic.com/magazine/archive/2014/06/the-case-for-reparations/361631/>
 - Agency for Healthcare Research and Quality. Resources for addressing disparities and improving quality. <https://nhqrnet.ahrq.gov/inhqrdrr/resources/info>
- Videos:
 - Race Forward. What is systemic racism? <https://www.raceforward.org/videos/systemic-racism>
 - Vox. Glad you asked, season 2. Series of five videos. <https://www.youtube.com/playlist?list=PLJ8cMiYb3G5cOFj1VQf8ykNOI0ptuHybc>
 - Jones LA. Get comfortable with being uncomfortable. <https://www.youtube.com/watch?v=QijH4UAqGD8&t=184s>
 - PBS. Health disparities. <https://www.pbs.org/video/stay-tuned-health-disparities/>

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- prediction of thrombolysis decisions for black and white patients. *J Gen Intern Med* 2007;22(9):1231-1238.
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 12. Hall MB, Carter-Francique AR, Lloyd SM, Eden TM, Zuniga AV, Guidry JJ, Jones LA. Bias within: Examining the role of cultural competence perceptions in mammography adherence. *Sage Open* 2015;5(1):2158244015576547.
 13. Gaston GB. African-Americans' perceptions of health care provider cultural competence that promote HIV medical self-care and antiretroviral medication adherence. *AIDS Care* 2013;25(9):1159-65.

Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.47: Medicine for the soul- spirituality in pharmacy

Learning Objectives

At the end of this case, students will be able to:

- Recognize the role of spirituality in providing whole person patient care
- Identify spiritual concerns that may impact a patient's medical care
- Incorporate plans to address spiritual concerns in patient care

Introduction

In delivering patient-centered care, patients should be treated holistically as people and not simply as having a disease. Acknowledging spirituality is an important aspect of caring for a patient and is considered part of whole person patient care; however, it is not often integrated into the traditional patient care plan.¹ According to recent Gallup polls, approximately 90% of people in the United States believe in God or a universal spirit; 50% of all Americans define themselves as religious and spiritual, while 25% identify as spiritual but not religious, 5% as religious but not spiritual, and only 20% as neither spiritual nor religious.^{2,3}

Americans who are more religious tend to have higher wellbeing.⁴ During recent global and domestic crises, including the 9/11 terrorist attacks and the COVID-19 pandemic, Americans reported an increase in church attendance, improved spirituality, and praying for the pandemic to end.⁵ Research in mental health has demonstrated that religious beliefs and practices have been associated with lower rates of anxiety, depression, substance abuse, and suicide, as well as faster recovery, greater meaning in life, and social support.¹ In addition to mental health, religion and spirituality have been associated with improvements related to chronic diseases including diabetes, cancer, renal and cardiovascular diseases.⁶⁻⁹

Assessing a patient's religious and/or spiritual needs can be completed through a variety of available spiritual assessment tools. Spiritual assessment tools may be very short or extremely detailed, general or disease-specific, and questions should be open-ended. Some commonly recognized spiritual assessment tools are the HOPE,¹⁰ FICA,¹¹ SPIRITual Assessment,¹² CSI-Memo,¹³ ACP Spiritual History,¹⁴ and Single Question¹⁵ tools. The Joint Commission Accreditation Standards mandate completion of a spiritual assessment,¹⁶ and the American Psychiatric Association, in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), has a diagnostic classification of "religious or spiritual problem."¹⁷ Generally, spiritual assessments are recommended in the following settings: new patient visits in ambulatory care, new hospital admissions, when a patient is in crisis, when a patient receives "bad news," when a patient is struggling with lifestyle changes, and in patients with difficult to treat diseases.¹⁵ Notably, healthcare professionals do not need to be of the same religious background to conduct a spiritual assessment.

It is important to recognize that spiritual beliefs of patients will vary widely, even if they are part of an organized religion.¹⁸ As healthcare professionals, there is need to provide patient-centered, whole person care, and be careful not to stereotype or pass judgment. In the realm of spirituality, this includes taking a spiritual assessment when appropriate, supporting a patient's spiritual or religious practices (e.g., attending religious services, reading religious texts), being sensitive to a patient's spiritual concerns, praying with a patient (if the patient requests it and the healthcare professional is comfortable doing so), or making referrals to a chaplain or other recognized religious leader.¹⁹

In pharmacy practice, pharmacists must recognize that the spiritual beliefs of patients can influence their general health beliefs and behaviors all the way through end-of-life care.¹⁸ For example, some individuals may favor integrative healing methods or treatments which are thought to support the human spirit.²⁰ Examples may include meditation, massage, prayer, tai chi, yoga, acupuncture, and natural products. In addition, spiritual beliefs may impact patient decisions regarding use of therapies such as blood products or pharmacologic agents including pain medications, contraceptives, immunizations, or medications containing animal products or gelatin.¹⁸ A final consideration is that medications requiring administration with food may need to be adjusted when patients are fasting due to religious observances.

Case

Scenario 1.47.1

You are the pharmacist in an ambulatory care clinic. Your physician colleague asks you to provide a medication therapy management (MTM) consultation. The physician has concerns because upon completion of the FICA spiritual assessment, she determined the patient will be fasting during the month for Ramadan.

CC: “The doctor wanted me to see you about my medications during Ramadan.”

Patient: MH is a 52-year-old Bengali male (65 in, 65.8 kg) who drives a taxi in New York. He is a refugee from Bangladesh and has been living in the United States for the past 15 years. He is in clinic for a routine follow-up visit.

HPI: MH has episodes of hypoglycemia at least once a month. He monitors his blood glucose once or twice a week and when he feels like his blood glucose is low. He has had no episodes of DKA or HHS and has fasted before for Ramadan; it appears his experience was positive, and he would like to fast again for 16 hours a day.

PMH: T2DM x 11 years; HTN; GERD

FH: Unknown

SH:

- History of smoking (1/2 ppd; quit seven years ago)
- Denies alcohol or illicit drug use

Medications:

- Metformin 1000 mg BID
- Liraglutide 1.2 mg subcutaneously daily
- Amlodipine 10 mg daily
- Lisinopril 10 mg daily
- Famotidine 20 mg daily PRN

Allergies: NKDA

Vitals:

- BP 135/95 mmHg
- HR 85 bpm
- RR 16/min
- Temp 97.9°F
- SpO₂ 100% RA

Labs:

- SCr: 1.1 mg/dL
- POC fasting glucose: 138 mg/dL
- HgbA1c: 9.2%

SDH: MH speaks Bengali as his dominant language and completed English as second language classes upon arrival in the United States. His income is approximately \$39,500/year. His wife does not work and is responsible for most of the food preparation; they follow a halal diet. They have three children at home who currently attend the local public school. MH's neighborhood community is diverse and consists of other Bengali refugees, Polish immigrants, and Black Americans. He is a devout Muslim and lives within walking distance of the mosque.

Additional context: Your physician colleague's FICA assessment notes the following:

- **F** (Faith or Beliefs): MH is a practicing Muslim who considers himself to be religious.
- **I** (Importance and Influence): MH's faith is extremely important to him and greatly impacts his daily life. Specific to our meeting today, he believes that it is his duty to fast during Ramadan, but he will still take care of his diabetes and believes his current medications are allowed when he fasts. It is very important for him to be able to fast during this time.
- **C** (Community): MH is part of a religious community, and they are supportive of each other. He does attend religious services at a mosque. It is close to his house, and he walks there to pray five times a day when not working.
- **A** (Address): He would like our team to recognize that he would like to continue to fast during this time and would like to do so safely.

Case Questions

1. What role would acknowledging MH's spirituality have when caring for him?
2. What challenges might you, as a healthcare professional, face when addressing MH's spirituality?
3. Why is it important to you, as the pharmacist, to conduct a spiritual assessment? What important religious or spiritual beliefs impact patient care?
4. What specific spirituality-related concerns might you have regarding MH's pharmaceutical care?
5. What specific non-pharmacologic interventions could you recommend to integrate MH's spirituality into his care plan, both in general, and during Ramadan specifically?
6. What specific pharmacologic interventions could you recommend to integrate MH's spirituality into his care plan?

Author Commentary

Spirituality and its role in patient care is often overlooked and under-valued. As the demographics of the United States change, it is expected that pharmacists and other clinicians will continue to care for patients with a wide range of different beliefs. From a global perspective, faith-based organizations (FBOs) have played a role in assisting with social determinants of health and providing healthcare services.^{21,22} These FBOs have assisted in providing educational services, healthcare access, and psycho-social support/counseling. FBOs have also been integral in policy formation to achieve the United Nations Sustainable Development Goals.²¹ During the COVID-19 pandemic, the Centers for Disease Control and Prevention (CDC) offered guidance for providing spiritual care to patients; however, it is important to note that this guidance may have differed from what FBOs would have recommended.²³ In addition, religious leaders were instrumental in educating their communities, specifically the African American community, on the realities of COVID-19.²⁴

Pharmacists should be aware of the potential impact of religion/spirituality on patient outcomes. For example, religion/spirituality has been identified as an important aspect of care for patients with HIV, including a positive association with medication adherence and clinical health outcomes,^{25,26} as well as HIV prevention strategies.²⁷ There have also been positive associations in addiction medicine, with implications for helping to combat the current opioid epidemic and other substance use disorders, specifically alcohol use disorder.²⁸⁻³⁰ Pharmacists should consider providing spiritual assessments to these patients and determining the role spirituality may have in assisting patients in improving their health. In addition, pharmacists are aptly situated towards recognizing and addressing spiritual or religious medication related concerns.

Patient Approaches and Opportunities

Recognizing the role of spirituality in patients' lives will allow pharmacists to provide holistic patient-centered care. It is important to realize that pharmacists do not need to be experts on every religion or have comprehensive knowledge about integrative medicine. What is important is determining the role of spirituality in the life of each patient through a standardized spiritual assessment tool. Oftentimes, particularly in a busy practice setting, utilizing the single-question tool will provide enough information to begin a conversation. Allow the patient to lead you in a discussion about what is important for them; if they are of a particular faith/religious background listen to them about what restrictions they may have based on their religion, keeping in mind that everyone may approach religion differently.

From a pharmacologic perspective, most spiritual-based medication restrictions are in utilizing animal-derived products, gelatin or stearic acid-containing tablets/capsules, pain medications, contraceptives, immunizations, and blood products.^{18,31} If you are caring for a patient who has a terminal condition or has a recent major life change, consider the role that spirituality or religion might have in their life. They may have or choose restrictions about end-of-life or palliative care, try integrative medicine, benefit

from prayer, reading religious texts or simply need the support of a religious/spiritual community.^{18,20} Do not hesitate to refer a patient to a chaplain or other member of the religious community for assistance.¹⁵

Important Resources

Related chapters of interest:

- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [More than just diet and exercise: social determinants of health and well-being](#)
- [Getting to the point: importance of immunizations for public health](#)
- [When disaster strikes: managing chaos and instilling lessons for future events](#)
- [You say medication, I say meditation: effectively caring for diverse populations](#)
- [Sweetening the deal: improving health outcomes for patients with diabetes mellitus](#)

External resources:

- Websites:
 - Duke University. Center for Spirituality, Theology and Health. <https://spiritualityandhealth.duke.edu/>
 - American Psychiatric Association. Mental health and faith community partnership. <https://www.psychiatry.org/psychiatrists/cultural-competency/engagement-opportunities/mental-health-and-faith-community-partnership>
 - International Diabetes Federation and Diabetes and Ramadan International Alliance. Diabetes and Ramadan: practical guidelines 2021. <https://www.idf.org/our-activities/education/diabetes-and-ramadan/healthcare-professionals.html>
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Glossary and Abbreviations

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- [Abbreviations](#)

1.48: Uncrossed wires- working with non-English speaking patient populations

Learning Objectives

At the end of this activity, students will be able to:

- Identify health-related barriers for non-English speaking patient populations
- Discuss challenges that pharmacists may encounter when working with non-English speaking patient populations
- Propose strategies that pharmacists may use to overcome barriers when assisting non-English speaking patient populations seeking healthcare
- Identify resources that may be relevant for pharmacists when working with non-English speaking patient populations

Introduction

Language barriers have been identified as a determinant of health and a risk factor for adverse events. In the United States, non-English speaking patient populations encounter several health-related barriers in managing the dynamics of transcultural or cross-cultural care. Patients may be uncomfortable or distrustful of healthcare professionals, whether from previous negative experiences, cultural differences in expectations, or lack of trust in the healthcare professionals or the system itself. Issues related to transitions of care, medication adherence, patient counseling, health literacy, health disparities, and healthcare access issues also exist. Examples may include misunderstanding of directions for taking medication, instructions or need for follow-up appointments, or disease state education. To address these language-related issues to advance health equity, improve healthcare quality, and eliminate healthcare disparities, the United States Department of Health and Human Services Office of Minority Health (OMH) developed national standards for ensuring the provision of Culturally and Linguistically Appropriate Services (CLAS).¹

A systematic review of 14 studies within eight countries, which included 300,918 cross-cultural participants, studied the impacts of language barrier in healthcare. The researchers found that a language barrier between patients and healthcare professionals resulted in miscommunication, thereby resulting in dissatisfaction of both parties, decreased quality of healthcare delivery and patient safety, and increased the cost and time of care delivery.² The authors concluded that the use of online translation tools (e.g., Google Translate and MediBabble) may improve not only patient and healthcare professional satisfaction but also the quality of healthcare, although it comes with an increase in indirect cost of care due to the additional interpreter services.² On the other hand, practical experience has shown that these online translation tools are not always accurate and should be used with caution.

Pharmacists encounter variable challenges when working with non-English speaking patient populations, and these depend on the knowledge and self-efficacy of the pharmacist. Some pharmacists may feel uncomfortable or insecure with using medical translators to provide pharmaceutical care due to inexperience with the third-party communication. Pharmacists can become better equipped to overcome these challenges by gaining the skills and tools necessary for cultural humility when dealing with the non-English-speaking patient populations.

Case

Scenario 1.48.1

You are an infectious disease pharmacist who is covering viral hepatitis patients in the gastrointestinal (GI) clinic while the regular pharmacist is out on maternity leave. The GI physician contacts you because she would like for you to schedule a telephonic visit with a patient who has been scheduled for a repeat colonoscopy after a recent inconclusive colorectal screening. The patient visited the GI physician specialist for both his hepatitis B virus (HBV) infection follow-up ultrasound and colonoscopy results today.

CC: "I'm here for my colonoscopy results"

HPI: XZ is a 50-year-old Chinese male (70 in, 87.5 kg) visits the GI clinic for a follow-up. A Chinese language interpreter assists with his encounter. The physician notes that during his last visit three months ago, XZ received a colorectal cancer screening, which was limited by poor colon preparation. Five polyps were found throughout his rectum. However, he was recommended for a repeat procedure in 6-12 months with better preparation. He currently has no concerning symptoms such as rectal bleeding or pain.

PMH: HBV infection with cirrhosis; AUD; overweight

FH:

- Father: HBV (chronic)

SH:

- Alcohol use (1-2 beers daily)
- Caffeine use (mostly green or black tea)
- Denies illicit drug use
- Smokes cigarettes (unable to ascertain quantity or frequency of use)

Surgical/procedural/imaging history:

- Abdominal ultrasound three months ago: Suspected small polyp on gallbladder similar to exam one year prior; the liver was unremarkable in appearance
- Colonoscopy three months ago

ROS: XZ reports no changes since his last visit and no current complaints. He recently started a new job and has lost a few pounds.

Vitals:

- BP 136/93 mmHg
- HR 93 bpm
- RR 18/min
- Temp 97.8°F

Labs:

- BMP normal
- CBC normal except platelets 115 thou/L (reference: 177-406)

Type	Lab	Result (five months ago)	Normal range
Liver panel	Serum creatinine	1.05 mg/dL	0.6-1.2 mg/dL
	GFR	74 mL/min/1.73 m ²	≥60 mL/min/1.73 m ²
	Albumin	4.85 g/dL	3.2-5.5 g/dL
	Total bilirubin	0.8 mg/dL	0.2-1.2 mg/dL
	ALT	33 IU/L	0-55 IU/L
	AST	25 IU/L	0-50 IU/L
	Alk phos	52 IU/L	30-130 IU/L
	INR	0.99	<1
HBV panel	HBV surface antigen	positive	negative
	HBV viral DNA	Not detected	<10 IU/mL
Tumor marker	Alpha fetoprotein	3 ng/mL	0-8.3 ng/mL

Medications:

- Entecavir 0.5 mg tablet once daily
- PEG-3350/Electrolytes 236 gm as directed for colonoscopy

Additional context: XZ previously demonstrated very limited English proficiency and has notes in his chart requesting a Chinese interpreter at his visits. He occasionally had an English-speaking family member accompany him to clinic visits, but they were not always able to attend appointments. The patient often appeared more anxious during visits without his family member present, even though a medical interpreter was provided.

Also of note, the patient's sister had a challenging and extended hospital stay approximately two years ago due to severe pneumonia and heart failure exacerbation. During her hospitalization, the family was concerned that she was not receiving appropriate treatment. They had difficulty obtaining information about her progress due to lack of consistent language interpretation services at the facility. The experience was frustrating for XZ and likely contributed to his development of a level of distrust of healthcare providers.

Case Questions

1. How might language create a barrier for XZ in achieving optimal adherence to his HBV regimen? To the colon preparation instructions?
2. What are potential outcomes if XZ is not able to fully understand instructions for medications and procedural instructions?
3. How should the pharmacist approach contacting XZ utilizing CLAS standards?
4. What role can a pharmacist play in addressing XZ's poor adherence?
5. What are some best practices for communication via medical interpreter to ensure optimal patient care during the patient's visit? What questions or preferences could the pharmacist discuss with a trained medical interpreter prior to meeting with a non-English speaking patient to better prepare for a patient visit?

Author Commentary

Non-English speaking patients suffer the burden of language barriers including miscommunication and high cost of care due to additional services. Pharmacists must make conscious efforts to ensure healthcare equity for non-English speaking patient populations by seeking and implementing evidence-based strategies to minimize the negative medication-related impacts of language barriers for the non-English speaking patient populations.

Some pharmacists may lack the time to provide highly needed extended patient appointments or may be unaware of other available resources to improve quality of care for this population. Patients' lack of health insurance, inadequate health insurance coverage, or access to other healthcare resources may affect the pharmacist reimbursement and discourage the provision of the additional services, including interpretation services to the non-English speaking patient population. Pharmacists can overcome these barriers by advocating for hiring staff from diverse language backgrounds, especially if the pharmacy serves patients from specific language communities.

Patient Approaches and Opportunities

Counseling non-English speaking patients effectively through a medical interpreter requires some adjustments. When possible, plan extra time for the interaction. Speak slowly and clearly but avoid yelling. Use short sentences to provide a manageable amount of information for translation and avoid use of complicated medical terms, slang, or abbreviations. Be aware of nonverbal communication and use a caring tone of voice and facial expression. Even if you do not understand the patient's words, actively listen to the patient while he or she is talking. Similarly, speak to the patient and not the interpreter (e.g., "How can I help you today?" instead of asking the interpreter "How can I help her today?"). This is often difficult as our tendency is to look toward the interpreter, but addressing the patient directly helps reinforce the relationship with the patient and perception of care. As with all patients, use open-ended questions to ensure understanding, and when possible, use pictures or gestures to aid understanding.³

Along with the CLAS standards, Joint Commission standards require accredited hospitals to provide information in a way that patients understand, which includes providing information in their preferred language.⁴ Availability of in-person versus telephone or video interpretation varies, but healthcare providers should be aware of the resources available at their practice sites to ensure they can provide equitable care to patients regardless of their preferred language. Use of online or smartphone app-based

translation may be helpful in emergency situations if no other service is available, but otherwise is discouraged, unless it has been designed and tested for reliable translation of medical information.

Pharmacists can play a key role in overcoming barriers encountered by non-English speaking patient populations seeking healthcare services. Commitment to ongoing cultural competence and awareness of these challenges are vital for providing high-quality care for non-English speaking patient populations.

Important Resources

Related chapters of interest:

- [Saying what you mean doesn't always mean what you say: cross-cultural communication](#)
- [Communicating health information: hidden barriers and practical approaches](#)
- [Ethical decision-making in global health: when cultures clash](#)
- [Equity for all: providing accessible healthcare for patients living with disabilities](#)
- [The Sustainable Development Goals and pharmacy practice: a blueprint for health](#)
- [You say medication, I say meditation: effectively caring for diverse populations](#)
- [Experiences of a Caribbean immigrant: going beyond clinical care](#)
- [The great undoing: a multigenerational journey from systemic racism to social determinants of health](#)

External resources:

- Websites:
 - International Medical Interpreters Association. IMIA guide on working with medical interpreters. https://www.imiaweb.org/uploads/pages/380_5.pdf
- Games:
 - Barna. <https://sites.lsa.umich.edu/inclusive-teaching/barna/>
 - BaFa BaFa. <https://www.simulationtrainingsystems.com/corporate/products/bafa-bafa/>
- Videos:
 - Fanlight Productions: Worlds Apart. http://fanlight.com/catalog/films/912_wa.php
- Other:
 - Ratzan SC, Parker RM. 2000. Introduction. In: *National Library of Medicine Current Bibliographies in Medicine: Health Literacy*. NLM Pub. No. CBM 2000-1. Bethesda, MD: National Institutes of Health, U.S. Department of Health and Human Services. <https://www.nlm.nih.gov/archive/20061214/pubs/cbm/hliteracy.html>

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1.49: Unintended consequences of e-cigarette use- a public health epidemic

Learning Objectives

At the end of this case, students will be able to:

- Describe the social and behavioral influences on e-cigarette use and develop strategies to address those influences
- Discuss the risk factors of e-cigarette use in an adolescent population
- Determine the role of a pharmacist in addressing the e-cigarette public health epidemic
- Identify public health strategies to effectively address the e-cigarette epidemic

Introduction

Electronic cigarettes, also known as e-cigarettes, were first introduced by Herbert A. Gilbert, who patented a “smokeless tobacco cigarette” in August 1965 with a goal of providing a safe and harmless method for smoking.¹ First-generation e-cigarettes looked similar to traditional cigarettes, composed of a battery and a component to house nicotine solution (also called e-liquid or e-juice).¹ Over time, e-cigarette devices have evolved to resemble pens or USB flash drives, with availability of over thousands of e-liquid flavors.²

Initially marketed by companies as harmless, emerging research has shown that e-cigarettes are anything but. The majority of e-cigarettes contain nicotine in their e-liquid, which remains an addictive substance that can be detrimental to the development of learning, memory, and attention of youth.³ A commonly sold e-cigarette called JUUL provides its e-liquid in what is known as a pod, which can contain as much nicotine as a regular pack of 20 cigarettes.⁴ Unfortunately, an estimated two-thirds of youth choosing to use JUUL are also unaware that JUUL pods always contain nicotine, and therefore, may view it as harmless.⁵ Not only can the use of e-cigarettes cause nicotine addiction, but in 2020, the Centers for Disease Control and Prevention reported over 2,800 cases of vaping-associated lung injury across the United States.⁶

In the United States, the e-cigarette entered the market in the mid-2000s, and sales have rapidly increased since 2007. E-cigarettes are referred to by many different names, including “e-cigs,” “mods,” “vape pens,” and “vapes,” resulting in the term “vaping” to describe the use of an e-cigarette. Although companies selling e-cigarettes intended their products to be used as a safe way to deliver nicotine to adults who were already using traditional cigarettes, widespread advertisement campaigns of e-cigarettes pushed in both television and print promoting fruity flavors of e-liquid attractive to young people resulted in a very different reality. Accordingly, in 2013, it was estimated that 13.1 million middle school and high school students were aware of e-cigarettes, and by 2018, e-cigarette use among high school students was 20.8%, equating to an estimated 3.6 million youth.^{3,7} E-cigarette use has now surpassed that of traditional cigarette use and is the most used tobacco product among youth.¹ E-cigarette use during youth has been shown to progress to traditional cigarette use later in life.^{8,9} This can be particularly concerning as research shows this trend holds true for youth who begin e-cigarette use with no intentions of using traditional cigarettes in the future, resulting in a new population of cigarette users.⁸

Pharmacists have played an important role in tobacco cessation through motivational patient interviewing and counseling; similarly, there is also a role that the profession can play to address the growing public health epidemic of e-cigarette use, particularly among youth users. As health care professionals, we can emphasize recommendations from the Centers of Disease Control and Prevention to provide education on the potential for e-cigarettes to benefit adult non-pregnant smokers, and urge against the use of e-cigarettes for youth, young adults, pregnant women, and those who do not currently use tobacco products, emphasizing the harm they may cause.¹⁰ Importantly, although patient education and counseling are vital, it is also necessary to recognize education and counseling alone may be insufficient to fully address the current e-cigarette epidemic in the United States. Laws and policies, such as the Tobacco 21 law put into place in 2019, may need stricter enforcement to control the sales of such products to individuals under the age of 21.¹¹

Case

Scenario 1.49.1

You are an ambulatory care pharmacist working at a family medicine practice.

CC: “My child keeps getting in trouble for vaping at school and I need them to stop vaping.”

Patient: JL (they/them) is a 17-year-old patient (66 in, 50.1 kg) brought to the clinic by their mother for help in quitting vaping.

HPI: JL has been vaping for the past three years. They initially started vaping occasionally on the weekends when staying at friends’ houses, but now uses throughout the day every day, mostly related to stress and anxiety. They state they go through about 1 gram cartridge in 3-4 days. They use a variety of types, but most commonly JUUL. They either buy it from stores that they know will sell it to them or has their 18-year-old friends purchase it. JL’s mother has also purchased them several pens in the past when they were feeling anxious due to being out.

PMH: GAD

FH:

- Mother: current smoker; asthma
- Father: HTN; hyperlipidemia
- Two younger siblings: both healthy

SH:

- Vapes daily: mainly uses JUUL pods; occasionally borrows other types from friends
- Denies alcohol, cigarette, and illicit substance use
- Denies use of products with THC to their knowledge

Medications:

- Apri (ethinyl estradiol 0.03 mg and desogestrel 0.15 mg) one tablet daily

Allergies: NKDA

Vitals:

- BP 110/76 mmHg
- HR 96bpm
- RR 16/min
- Temp: 97.6°F
- Pain: 0 out of 10

Surgical history: none

Additional context: JL doesn’t understand why they are getting in trouble for vaping at school when they know that there aren’t any harms to using it. They say, “it’s not like smoking cigarettes like my mom does.” They keep the pen in their locker and uses it between classes at school. JL is interested in being able to reduce their use of vaping as they do not want to put their college plans in jeopardy with any more punishments but feels they can still safely vape after school and on weekends. They state by using it, they don’t feel they need to go to their counselor anymore for anxiety, because they use vaping to calm themselves down.

Case Questions

1. What are the risks of using e-cigarettes in a teenager?
2. Does JL qualify for use of nicotine replacement therapy, Chantix, or Zyban?
3. What are the social and behavioral factors that may make quitting use of e-cigarettes difficult for JL? How might you help

them to address them?

4. What are the risks of using e-cigarettes and their current medications together?
5. How does the marketing and availability of e-cigarette products affect their use by teenagers?
6. What are some action steps that pharmacists can take to help address this public health issue? Consider a variety of practice settings: community, hospital, outpatient, public health department, research.

Author Commentary

Addressing the use of tobacco and tobacco products is a role that pharmacists already play. By utilizing the Transtheoretical Model for Change or the 5 A's approach, pharmacists can help a patient understand where they are at in their desire to make the change and meet them there to best help them achieve success. Understanding the importance of tobacco cessation and the negative consequences of nicotine addiction, pharmacists can also address rising e-cigarette use in youth and adults. It is important for pharmacists to stay abreast of emerging data regarding e-cigarette use. The CDC provides updates on e-cigarette, or vaping, product use-associated lung injury (EVALI) that are useful for pharmacists to be aware of. Equally important is staying up to date on the long-term consequences of vaping and its impact on comorbid health conditions.

Patient Approaches and Opportunities

Pharmacists have tools (Transtheoretical Model for Change or the 5 A's approach) available to provide education to youth and adults in multiple settings regarding the dangers of e-cigarettes. Pharmacists may collaborate with schools to provide classroom education on the potential consequences of vaping. These education sessions may help in addressing some of the myths about vaping (i.e., JUUL pods not containing nicotine) and lead youth to make smarter decisions regarding vaping. Education should be unbiased, and evidence based. Pharmacists should address the influences of peer pressure and include tips on how to combat it and should include motivational messages to discourage youth from picking up potentially addictive and detrimental behaviors. With each encounter, either individual or in group settings, pharmacists can assess the use of vaping devices and if a patient desires to quit. As the scope of pharmacists continue to expand to prescribing pharmacotherapy for tobacco and vaping cessation, pharmacists will play an even larger role in serving patients. Under current regulations, pharmacists can still be valuable in assess and recommending OTC products as well as connecting patients with prescribers and resources.

As scopes of practice expand, pharmacists prescribing appropriate pharmacotherapy to tobacco users trying to quit will also be key. Additionally, if and when possible, pharmacists can also be part of the larger movement to enact policies that increase enforcement on the sale of e-cigarettes to minors. The e-cigarette pandemic must be tackled from multiple perspectives to really be able to find a sustainable solution.

Important Resources

Related chapters of interest:

- [Smoke in mirrors: the continuing problem of tobacco use](#)

External resources:

- Websites:
 - Centers for Disease Control and Prevention. Electronic cigarettes. https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm
 - US Department of Health and Human Services. Know the risks: e-cigarettes & young people <https://e-cigarettes.surgeongeneral.gov/>
 - Surgeon General advisory on e-cigarette use among youth. <https://e-cigarettes.surgeongeneral.gov/documents/surgeon-generals-advisory-on-e-cigarette-use-among-youth-2018.pdf>
 - Smokefree teen.gov. How to quit vaping. <https://teen.smokefree.gov/vaping-quit-plan>
- Journal articles:
 - St Helen G, Eaton DL. Public health consequences of e-cigarette use. *JAMA Intern Med* 2018;178(7):984-986.
 - Leventhal AM, Goldenson NI, Cho J, Kirkpatrick MG, McConnell RS, Stone MD, Pang RD, Audrain-McGovern J, Barrington-Trimis JL. Flavored e-cigarette use and progression of vaping in adolescents. *Pediatrics* 2019;144(5):e20190789.
- Phone applications:

- QuitGuide. <https://smokefree.gov/tools-tips/apps/quitguide>
- quitSTART. <https://smokefree.gov/tools-tips/apps/quitstart>

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Glossary and Abbreviations

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1.50: A toxic situation- the roles of pharmacists and poison control centers

Learning Objectives

At the end of this case, students will be able to:

- Recall the role of poison control centers in toxicologic emergencies
- Describe pharmacist roles in identifying and managing toxicologic emergencies
- Recommend resources to utilize to manage toxicologic emergencies

Introduction

Intentional and unintentional poisonings unfortunately occur all too frequently in the United States. In 2019, the American Association of Poison Control Centers (AAPCC) logged over 2.1 million human exposures into the National Poison Data System (NPDS).¹ The AAPCC is made up of 55 poison centers located around the United States and Puerto Rico and serves a vital role to the healthcare community and the public in educating and assisting with the management of toxicologic emergencies. Poison control centers are made up of physicians, pharmacists, nurses, and health educators and respond to calls (1-800-222-1222) from healthcare professionals and the public regarding both human and animal poisonings 24 hours a day, seven days a week, 365 days a year.²

Emergency departments (EDs) and hospitals must be equipped to identify and manage toxicologic emergencies. Patients (pediatrics or adults) can present with either intentional or unintentional ingestions of single or multiple substances; hence, quick assessments and histories are vital. Common questions asked include: “what and how much was ingested?” or “when was the ingestion?” If able, a thorough patient history should be taken to determine prescription history and use of illicit substances, over-the-counter medications, and herbal supplements. A physical exam should be done to assess for any toxidromes, such as those resulting from antimuscarinic, sympathomimetic, opioid, sedative-hypnotic, or others.

Pharmacists in the institutional setting play important roles in information gathering, assessment, and management in these situations.³ In situations where the patient is unconscious, pharmacists can utilize their skills in reviewing the electronic health record and/or calling community pharmacies to determine which potential medications the patient could have ingested. Following patient evaluation, pertinent laboratory studies, electrocardiogram (EKG), radiographic imaging, and other diagnostics can be conducted. Some of these labs may be run in the facility but some hospitals may have to send them out (leading to a delay in the lab result returning) and pharmacists should know which lab assays are completed in the hospital. Based upon patient vitals and diagnostic results, antidotal and/or resuscitative therapy should be initiated if warranted. The local Poison Control Center or toxicologic services can be consulted at any point during this process to assist with evaluation, diagnostics, and treatment. Patient admission to the hospital is dependent on the situation, but in the cases of intentional ingestions, a psychiatric evaluation should be conducted. In addition, pharmacists can play an important role as we are the medication experts and have extensive knowledge on pharmacology and pharmacokinetics of commonly used medications.

Case

Scenario 1.50.1

You are a pharmacist in an ED at an urban academic medical center.

CC: “I’m not sure what happened but I found her totally out of it.”

Patient: AT is a 56-year-old female (64 in, 84 kg) who has presented to the ED after being found on the bathroom floor with an empty bottle of sertraline 50mg tablets (90-day supply), which was refilled three days prior.

HPI: Emergency medical services (EMS) was called by AT's significant other, who found her arousable but confused, and altered with a pulse. When EMS arrived at the ED, AT was still arousable and then became more agitated, diaphoretic, and febrile. When the ED provider came to evaluate her, he found AT not consistently following commands and not answering all questions appropriately.

PMH: Major depressive disorder

Vitals:

- BP 148/88 mmHg
- HR 89 bpm
- Temp 100.1°F
- RR 16/min
- O₂ sat 99% on RA

ROS: Alert and oriented but with delayed verbal response time and slurred speech. In addition, AT experienced a clonus which lasted for a few minutes. Other than agitation noted on exam, AT was also noted to have slight tremors in the hands, but otherwise the remainder of examination was unimpressive.

Labs:

- Quantitative serum acetaminophen: undetectable
- Quantitative serum salicylate: undetectable
- Basic metabolic panel: WNL except bicarbonate at 21 mmol/L
- EKG: normal sinus rhythm of 96 bpm with normal QTc 458 msec

Additional context: About four hours after arrival to the ED with unknown ingestion time, AT had a witnessed generalized tonic-clonic seizure lasting 20 seconds, which resolved on its own. However, fifteen minutes later, the patient then experienced another seizure lasting 60 seconds. The ED team immediately gave benzodiazepines to help break the seizure. A glucose was checked and was found to be normal.

Case Questions

1. What information would you want to obtain from AT's significant other?
2. What type of information would you want to gather from the AT's medical record?
3. What type of toxidrome is AT most likely experiencing? What medications would be appropriate at this time for management and what would you monitor for?
4. What type of resources would you utilize to aid in identification and treatment for AT?
5. Following AT's presentation, you decide to partner with the Poison Control Center on educating patients that present to your ED about medication safety. What would be some good tips to share with patients and where could you find these resources?

Author Commentary

As integral members of the healthcare team, pharmacists in institutional settings can play a vital role in prevention and management of intentional or unintentional medication misuse. Emergency medicine pharmacists must be up to date on the emergent management of overdoses as well as on the signs that may be exhibited when patients present but are unable to communicate what medications were taken. Emergency medicine pharmacists also have an opportunity to intervene if a patient presents for care more than once with similar issues attributed to the same medications. Recognition of early warning signs is of upmost importance, whether that be recognition of a potential issue with medication misuse or recognition that a patient has taken a potentially lethal dose of a medication. In addition, being aware of the resources available when a patient is in crisis, such as the Poison Control Center, is essential.

In addition to educating themselves, pharmacists can pursue opportunities to engage the public in medication safety education. As mentioned previously, the Poison Control Center has several ideas on their website for topics that could be shared with patients regarding dangerous or potentially dangerous substances or medications.⁴ In addition, many professional pharmacy organizations and/or student organizations in colleges/schools of pharmacy also have resources and community education tools that could be utilized to provide this valuable education.

Patient Approaches and Opportunities

As medication specialists, pharmacists may be involved in direct patient care associated with toxicologic emergencies. They also may play a vital role with work at Poison Control Centers through triaging calls, developing, or assisting with the development of specific protocols and policies for local hospitals, and educating the public about preventing poisonings and accidental ingestions.⁵ However, regardless of setting, pharmacists can engage the public in education regarding safe medication practices.

Mr. Yuk™, developed by the Pittsburgh Poison Center in 1971, is a sticker that can be given to patients to be placed on substances in the household that are toxic and to educate adults and children about poison prevention.⁶ Pharmacists, through the basic provision of medication counseling, can provide information to patients that can prevent overdoses, such as maximum doses for medications taken on an as-needed basis, not mixing certain medications with each other or substances like alcohol, or how to use dosing syringes for dosing liquids in children. They additionally can engage patients in conversations regarding medication storage (e.g., use of child-safe containers and storage up and away from children and pets) and the importance of safe medication disposal.

Important Resources

Related chapters of interest:

- [Safe opioid use in the community setting: reverse the curse?](#)
- [Harm reduction for people who use drugs: A life-saving opportunity](#)
- [A stigma that undermines care: opioid use disorder and treatment considerations](#)
- [Expanding the pharmacists' role: assessing mental health and suicide](#)

External resources:

- American Association of Poison Control Centers. <https://www.aapcc.org/>
- American College of Emergency Physicians. Initiating opioid treatment in the emergency department (ED): frequently asked questions (FAQs). <https://www.acep.org/globalassets/uploads/uploaded-files/acep/clinical-and-practice-management/resources/mental-health-and-substance-abuse/initiating-opioid-treatment-in-the-emergency-department-ed-faqs.pdf>
- Goldfrank's Toxicologic Emergencies, 11th ed, 2019. McGraw-Hill.
- Centers for Disease Control and Prevention. Poisoning prevention. <https://www.cdc.gov/safekid/poisoning/index.html>.

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

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1.51: Prescription for change- advocacy and legislation in pharmacy

Learning Objectives

At the end of this case, students will be able to:

- Compare and contrast collaborative practice agreements, standing orders, and protocols
- Describe the impact of pharmacist utilization of collaborative practice agreements, standing orders and protocols to advance patient care
- Identify potential barriers and solutions to utilization of collaborative practice agreements, standing orders, and protocols in pharmacy practice

Introduction

The role of the pharmacist has evolved from primarily distributive in nature to one that is more directly involved in patient care. Advancements in scope of pharmacy practice have been implemented in many states under collaborative practice agreements (CPA) – defined as formal practice relationships between a pharmacist and healthcare practitioner, allowing the pharmacist to assume responsibility for delegated patient care functions.¹ Such agreements have allowed pharmacists to work in interdisciplinary settings to improve clinical and economic outcomes related to several chronic diseases such as diabetes and hypertension.^{2,3} For example, a CPA for diabetes management typically allows for a pharmacist to initiate, adjust, or discontinue antidiabetic medications, order laboratory tests to monitor efficacy of treatment, and provide diabetes-related lifestyle and medication counseling. CPAs may be implemented in a variety of clinical settings including inpatient, ambulatory, community, and managed care. Although most states permit pharmacist-prescriber collaborative practice authority through CPAs, state laws vary widely, and CPAs must be customized to the laws and regulations under each state's pharmacy practice act and regulations.⁴ For example, some states restrict pharmacists to only enter CPAs with physicians, excluding agreements with mid-level practitioners.

Effective implementation of a CPA is crucial and will ensure compliance with local institution requirements, regulatory bodies, and state level rules (i.e., those endorsed by the state Boards of Pharmacy and Medicine). Infrastructure and process change may be necessary to integrate pharmacists' patient care services under a CPA within an organization, especially if no prior pharmacist services exist. Initial and ongoing education to stakeholders (chief medical officer, billing/compliance personnel, physicians/medical providers, and patients) may be necessary to build trust and ensure an understanding of the role of each party defined within a CPA.⁵

Although CPAs are a useful tool in expanding the role of the pharmacist to meet patient needs, they may be restrictive. CPAs can be patient-specific, meaning that a CPA must be authorized for each individual patient, or they can be population-specific, meaning they apply to a designated group of patients.⁶ In contrast to a CPA, statewide standing orders and protocols do not require pharmacists to find an individual prescriber to authorize prescribing abilities. These can be used to address larger public health needs where CPAs may not be practical. Standing orders and statewide protocols are used to broaden access to care and have been used by several states to allow pharmacists to provide medications. These two methods can be especially useful for public health needs (**Table 1**).

Examples of medications relevant to these methods include contraception, tobacco cessation medications, immunizations, HIV pre- and post-exposure prophylaxis, and naloxone. Under a standing order, a state official (typically the state health official) authorizes pharmacists to dispense select medications. Most states utilize a standing order for pharmacists to provide patients with naloxone.⁷ On the other hand, protocols are a version of autonomous prescribing where a state agency, such as the Board of Pharmacy, authorizes pharmacists to prescribe if a designated protocol is followed. Another option for increasing patient access to care is the use of unrestricted or categorical prescribing by pharmacists.

Table 1. Collaborative practice agreements, standing orders, and protocols

	CPA	Standing order	Protocol
Description	Allows the prescriber to enter into an agreement which delegates certain patient care functions to a pharmacist after a diagnosis is made	Written instructions that authorizes pharmacists without prescribing authority to supply specific medications when certain conditions are met that applies to a broad population Licensed independent practitioner who authorized is the prescriber	Allows for pharmacist initiation of a medication for a patient to meet a public health need. Utilized commonly for conditions and needs that do not require independent diagnosis and often executed for a certain activity Pharmacist is the prescriber
Examples	Management (pharmacologic, non-pharmacologic, and monitoring) of hypertension	Contraception, naloxone, tobacco cessation, immunizations	Contraception, naloxone, tobacco cessation, immunizations, post-exposure prophylaxis

Case

Scenario 1.51.1

You are a pharmacist practicing in a community-based pharmacy setting. Your pharmacy is located in a county that is designated as a healthcare provider shortage area with only one primary care provider (PCP). As such, patients often must travel to the next county to access care in a timely fashion. There are significant healthcare disparities affecting the community, including in rates of smoking and patients living in a contraceptive desert, and you are interested in identifying opportunities to address these needs. In your state, a statewide protocol exists for prescribing tobacco cessation medications, issued by the Board of Pharmacy. Your state also allows for pharmacists to enter CPAs as well. Both of these are shown in **Table 2**.

Table 2. Board of Pharmacy statewide protocol and CPA

STATEWIDE PROTOCOL FOR TOBACCO CESSATION MEDICATIONS	A pharmacist may prescribe medication(s) for tobacco cessation medication if the following requirements are met: Medications covered: Any FDA-approved medication for tobacco cessation medication Education/training requirements of pharmacist: Active pharmacist license Screening: The pharmacist shall utilize and document a health screening procedure based on the Clinical Practice Guideline for Treating Tobacco Use and Dependence. Documentation: The pharmacist shall keep the health screening information and all documentation related to treatment per the medical record keeping requirement by the state. The pharmacist must document what medication(s) were prescribed, including the directions and refills. Notification of the PCP: If a primary care provider exists, the pharmacist must notify the primary care provider that a prescription was provided to the patient within 7 business days.
COLLABORATIVE PRACTICE AGREEMENTS	Under collaborative practice agreements, pharmacists are authorized to implement predetermined drug therapy, which includes diagnosis and product selection by the patient's physician, modify prescribed drug dosages, dosage forms, and dosage schedules, and to order laboratory tests pursuant to a drug therapy management agreement that is physician, pharmacist, patient, and disease-specific.

Case Questions

1. Compare and contrast the use of a CPA, standing order, and statewide protocol for managing tobacco cessation. Discuss the benefits and drawbacks to each option.
2. What initial strategies might be necessary to identify external stakeholders and internal resources for your pharmacy to implement the statewide protocol to address tobacco cessation?
3. Assume you practice in a state where you cannot prescribe any medications under a CPA, statewide protocol, or standing order. How might you work to change your state's policies?
4. In what situations or conditions would it be useful to have a standing order or statewide protocol rather than a CPA?

Hint: Consider patient location, practice site, and public health concerns and consider state level data, such as that from <https://www.americashealthrankings.org/>.

5. What are the public health benefits for independent prescriptive authority for pharmacists (authority not dependent on a CPA, standing order, or statewide protocol)? Would it be useful to consider this policy option in this scenario or in any other situations?
6. A local obstetrician/gynecologist approaches you, as they would like you to help manage contraception for patients in your community. Under your state policy, what would you be permitted to do? What is a limitation under the current policy? What could you and the OBGYN do to improve the policy?

Author Commentary

Pharmacists have the ability to improve access to care and improve public health through CPAs, standing orders, and statewide protocols.⁵ As the profession of pharmacy continues to evolve, pharmacists must be innovative in designing patient care services that add value – in terms of both revenue and clinical outcomes.⁸ When crafting policy related to pharmacist prescriptive authority, careful attention must be given to how the greatest number of patients can be served. Policies should be framed in a manner that reduces barriers and allows pharmacists to practice within the standard of care. Arbitrary restrictions, such as training and documentation requirements beyond what is required for other health care professionals and patient age limits, should be avoided. Pharmacists are the most accessible healthcare professionals, and limits on who the pharmacist may treat should be avoided. Pharmacists should be encouraged to use their best professional judgement in determining if they are best served to meet the needs of a patient, or if the patient warrants referral to another provider. Policies that allow pharmacists to practice at the top of their education and training are ideal. Consideration must also be given in policies related to billing and reimbursement.

Pharmacists have an opportunity to lead efforts in designing and implementing public health programs that address the needs of the population in light of an ongoing primary care physician shortage. In order to successfully implement a policy related to pharmacist prescriptive authority, all stakeholders need to be involved in early discussions, including, but not limited to pharmacists, pharmacy technicians, pharmacist interns, public health officials, other prescribers (such as physicians, nurse practitioners, physician assistants, etc.), employers, and payers. This will help prevent barriers and ensure the needs of the population are met. Developing relationships with individuals and organizations outside of the profession of pharmacy is also essential. Public health officials, patient advocacy groups, health care provider organizations, and employer groups can help support policies that will improve access to care. National organizations can also be great partners, and many have state offices to assist with policy work (such as the American Lung Association, American Cancer Society, American College of Obstetricians and Gynecologists, AIDS United, and others). Most importantly, it is important to educate legislators and government officials about the vital role pharmacists play in public health and the diverse practice settings across the profession.

Patient Approaches and Opportunities

Policy approaches that permit the pharmacist to practice at the top of their license and training significantly benefit patients. After implementing a statewide protocol for pharmacist-prescribed contraception in Oregon, an estimated 51 unintended pregnancies were avoided, which saved the state \$1.6 million.⁹ When considering the best policy approach for expanding patients' access to care through pharmacist services, special consideration should be given to autonomous prescribing. One study revealed fatal overdoses were significantly reduced in states that provided direct authority for pharmacists to provide naloxone.¹⁰

When implementing new laws and regulation aimed at public health efforts and increasing access to care, pharmacists must take many factors into consideration. Workflow and time constraints tend to be the biggest concerns,^{11,12} alongside payment. Ensuring pharmacist services are covered by patient insurance is crucial, in addition to determining how to assist patients who are uninsured or underinsured. When crafting policy, pharmacists must start conversations with stakeholders, such as physicians, patients, public health officials, insurance companies, employers, professional organizations, and colleges of pharmacy immediately. This will assist in navigating barriers to policy solutions early in the process and increase the impact on patient care. Pharmacists also need to ensure that policies are implemented correctly. Offering training opportunities and including other personnel, such as technicians and students, can help to successfully launch and sustain new services.

Patients can greatly aid in advocacy efforts aimed at public health. Pharmacists can collect patient stories to share with policy makers or ask patients to share their personal experiences directly. Policies, including laws and rules, are aimed at improving and protecting public welfare.

Important Resources

Related chapters of interest:

- The “state” of things: Epidemiologic comparisons across populations
- Smoke in mirrors: the continuing problem of tobacco use
- Hormonal contraception: from emergency coverage to long-term therapy
- Deciphering immunization codes: making evidence-based recommendations
- A pharmacist’s obligation: advocating for change
- Staying on track: reducing missed immunization opportunities in the pediatric population
- A stigma that undermines care: opioid use disorder and treatment considerations
- Travel medicine: what you need to know before you go
- PrEPare yourself: let’s talk about sex

External resources:

- Websites:
 - National Alliance of State Pharmacy Associations. Collaborative practice agreements: resources and more. <https://naspa.us/resource/cpa/>
 - National Alliance of State Pharmacy Associations. Pharmacist prescribing: statewide protocols and more. <https://naspa.us/resource/swp/>
 - Society of St Vincent de Paul. Collaborative practice agreements: an implementation guide for community pharmacies. <https://bi3.org/wp-content/uploads/2020/01/1-CPA-Implementation-Guide-1.pdf>
 - Centers for Disease Control and Prevention. Advancing team-based care through collaborative practice agreements: a resource and implementation guide for adding pharmacists to the care team. <https://www.cdc.gov/dhds/pubs/docs/CPA-Team-Based-Care.pdf>
 - American Medical Association. Embedding pharmacists into the practice. <https://edhub.ama-assn.org/steps-forward/module/2702554>
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 - SAFE Project. State naloxone access rules and resources. <https://www.safeproject.us/naloxone-awareness-project/state-rules>
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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.52: Travel medicine- what you need to know before you go

Learning Objectives

At the end of this case, students will be able to:

- Identify elements to cover with patients during a pre-travel consultation
- Describe standard immunizations, immunization resources, and pre-travel prophylaxis
- List common health challenges that may arise during global travel
- Identify self-care strategies and internationally-based resources for patients during travel
- Identify situations when a patient should seek care following international travel

Introduction

Pharmacists have numerous roles in travel medicine or health consultations. These roles have been well-described in countries like Canada, the United Kingdom, Australia, and more.¹⁻⁵ Pharmacists in the United States are increasingly engaging in travel medicine and health consultations and can benefit from the experiences shared from other countries.⁶ Although a patient may be capable of finding answers to initial travel-related questions through other means, pharmacists can provide added specificity and suggest resources to enable the patient to have a successful and healthy trip.

Customization of recommendations is necessary to advise special populations or travel groups, even despite awareness of limitations in the completeness of information based on individual/group travel dynamics. Group or individual consultations may be provided for business travelers, humanitarian workers, students studying abroad, long-term travelers/ex-pats, individuals visiting friends and relatives, adventure travelers, families (e.g., traveling with minors or extended family), traveling to mass gatherings, and for special populations (e.g., chronic illness, pregnancy, etc.), which all have further unique considerations and recommendations.⁷⁻⁹ Other benefits of a pharmacist's involvement in travel consultations include convenience of appointments, serving as a "one-stop-shop" for vaccines, availability of travel kits and advice, and clinical benefits.¹⁰

Travel medicine or health consultations may include recommendations and services before the patient embarks on travel, advice of how to seek care or resources during travel, and post-travel consultation on the development of any new conditions/symptoms. A structure that can be implemented within each of these three elements is the 5W model (i.e., who? what? when? where? why?) to maximize the individualization of the patient. Each element of the consultation (pre-travel, during travel and post-travel) can benefit from this structure.¹¹

Potential services prior to travel may include travel health kits for self-care with standard and/or customized items that are beneficial during travel. These may include adhesive tape, bandages, and sterile gauze or dressing, insect repellent or bite treatments, eye drops, antihistamines or nasal decongestants, oral rehydration powder, analgesic, sunscreen, and other self-care items. The benefit of these resources is enhanced with advice on specific dosages, strengths, frequencies of use, which the pharmacist can adjust according to destination.¹²⁻¹⁴ The pharmacist can also advise on proper storage, documentation, supply, packing, and legality of prescription medications or adjustments to use to maintain efficacy.¹⁵

Beyond being prepared for self-care, all patients traveling internationally should be up to date with the standard vaccine schedule based upon age and comorbidities.¹⁶⁻¹⁸ Different vaccines are recommended based on the area of travel, and other preventative measures may be supplemented when vaccines are unavailable (e.g., bed nets and source avoidance with vector-borne illness).¹⁹ Most injectable travel-related vaccines are administered at the same visit, with a few exceptions. The Centers for Disease Control and Prevention (CDC) Yellow Book Travel Vaccine Summary Table provides details on dosing schedules and age restrictions for vaccines for common travel-related vaccines such as yellow fever, Japanese encephalitis, typhoid, rabies, and meningitis.²⁰ In general, patients should complete any vaccine series' at least two weeks before travel to ensure a complete immune response.¹⁹ However, some vaccines can provide sufficient immunity for travel after only one dose (for multiple-dose vaccines). Therefore, even patients traveling last-minute benefit from a review of needed travel-related vaccines.

Case

Scenario 1.52.1

You are the clinical pharmacist at a travel health clinic associated with a local community pharmacy. You are meeting a patient who has been referred to your service for an upcoming group trip. She is here for her own assessment, but also is seeking advice for the rest of her group.

CC: "It's going to be my first time outside of the country!"

HPI: MJ is a 24-year-old female traveler going to Costa Rica with her 25-year-old fiancé (BH) and her 70-year-old mother (CJ). All three travelers will be taking direct flights to San Jose from Chicago, IL. MJ states that she and her mother have never been out of the country, but BH visited New Zealand four years ago. The group plans on staying for five days with the following itinerary:

- Day 1: Travel to San Jose
 - Check into hotel
 - Coffee bean plantation tour
 - Visit the National Museum of Costa Rica
- Day 2: Hiking in the Central Valley
- Day 3: Tour/shopping in San Jose
- Day 4: Travel to Liberia
 - Check into hotel
 - Spend day at the beach
- Day 5: Hike/horseback ride

PMH:

- MJ: T1DM (since age three); asthma (x four years)
 - Experiences shortness of breath/wheezing two to three times a month and manages these symptoms with a rescue inhaler
 - Uses an insulin pump, testing her blood glucose eight times daily depending on meals and activity
- BH: ADHD (since start of college)
 - His fiancé states that his current medication regimen seems to be working well
- CJ: VTE (two years ago); HTN (x six years)

SH: Limited information regarding social history is available from the patient. MJ and BH live together when not traveling and enjoy cocktails socially. She states that her mother generally does not drink. None of the travel group members smoke or use illicit drugs to MJ's knowledge.

Current medications:

MJ

- ProAir HFA two puffs every six hours as needed for shortness of breath/wheezing
- OneTouch Delica lancets to test blood glucose up to eight times daily
- OneTouch Verio test strips to test blood glucose up to eight times daily
- Humulin N 32 units in the morning and 13 units at bedtime
- Humulin R administered after meal via sliding scale (maximum daily dose 80 units)

BH

- Adderall XR 20 mg by mouth every morning

CJ

- Eliquis 2.5 mg twice daily
- Lisinopril/HCTZ 20 mg/12.5 mg daily

Allergies:

- MJ: bee stings (anaphylactic reaction)
- BH: NKDA
- CJ: sulfa antibiotics (rash)

Vaccinations: MJ indicates that her and her fiancé are up-to-date on their routine vaccinations. BH remembers getting a few vaccinations before his trip to New Zealand but can't recall which ones. Her mother is also current on all of her routine vaccinations, and you can confirm this in your state's immunization documentation system.

SDOH: MJ is still on her mother's health insurance as a college student. BH separately receives Medicaid.

Case Questions

1. What clinical recommendations would you make to the travel group related to preparation (e.g., packing, medications, planning, documentation)?
2. What recommendations would you make to the travel group related to preparations for regulatory concerns with medications during travel?
3. What immunizations should each member of the travel group receive? When should they receive these vaccinations to ensure immunity?
4. MJ asks you specifically about mosquito bite prevention. What recommendations would you provide her?
5. What resources or advice on where to seek care can you provide your travel group for any healthcare needs they may have during their trip?
6. What overall recommendations, resources, or information would you provide your travel group?
7. The group's travel plans include a day at the beach. What recommendations can you make to your group regarding sun safety?

Patient Approaches and Opportunities

Pharmacists have a vital role in patient education prior to, during, and post travel. This includes, but is not limited to, recommendations on traveling with comorbid conditions, what items to include in a self-care kit, what vaccines to receive prior to travel, how to avoid common illnesses when traveling, and where to find emergency services abroad. Patients can locate this information online through the CDC website²¹ and Yellow Book.²² However, without background knowledge it can be difficult for patients to discern what information should be considered, decide when actions should be taken, and determine what information might be missing. A pharmacist's knowledge and accessibility make them uniquely positioned to ease the travel process and ensure patient safety while traveling. Pharmacists who wish to learn more about the area of travel medicine may pursue certification courses which cover key points of information related to travel medicine. These certificates are offered through the International Society of Travel Medicine¹ and American Pharmacists Association.²³

Author Commentary

When counseling patients, it is important to consider the patient's ability to provide self-care.

Social determinants of health (SDH/SDOH) such as a patient's ability to afford medications and access resources are important to consider. Whenever possible, recommendations provided to a patient or travel group should be customized to enhance the benefits to the patient(s) and the likelihood that they will continue to use the service. An example of impacts to SDH/SDOH may include the coverage of vaccines by insurance. In many instances, certain products/schedules may not be covered, or different formulations may be requested under coverage. The pharmacist should help the patient to identify methods of obtaining required travel-related vaccines that minimize out-of-pocket expense (i.e., prior authorization, alternative dosing schedule or product selection). In instances where vaccine may not be affordable to the patient, steps should be taken to determine alternative methods of reducing patient risk or exposure (e.g., social distancing, masks, source exposure reduction, alteration of planned activities, etc.)

A variety of unexpected events such as accidents or emergencies can arise during a patient's travel itinerary. While a pharmacist might not be able to cover all possibilities during a travel-medicine consultation, they can suggest resources for seeking care when abroad. Additionally, they may recommend travel health insurance and provide clarification on how this differs from normal

health insurance or trip-related cancellation insurance.

Important Resources

Related chapters of interest:

- [Unexpected souvenirs: parasitic and vector-borne infections during and after travel](#)
- [Immunizing during a pandemic: considerations for COVID-19 vaccinations](#)

External resources:

- Centers for Disease Control and Prevention. Travelers' Health. <https://wwwnc.cdc.gov/travel>
- Centers for Disease Control and Prevention. CDC Yellow Book <https://wwwnc.cdc.gov/travel/page/yellowbook-home>
- International Society of Travel Medicine. <https://www.istm.org/index.asp>

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Glossary and Abbreviations

- [Glossary](#)
- [Abbreviations](#)

1.53: A pharmacist's obligation- advocating for change

Learning Objectives

At the end of this case, students will be able to:

- Describe why advocacy in the profession of pharmacy is important
- List various strategies pharmacists can use to engage in advocacy
- Explain how legislation and regulatory authority are related

Introduction

One commonly defined goal among healthcare professions is to advocate on behalf of patients. The American Pharmacists Association (APhA) Code of Ethics states that “[a] pharmacist serves individual, community, and societal needs” and “seeks justice in the distribution of health resources.”¹ Furthermore, the APhA Oath of a Pharmacist contains the following two clauses: “I will consider the welfare of humanity and the relief of suffering my primary concerns,” and “I will embrace and advocate changes that improve patient care.”² Finally, the American Society of Health-System Pharmacists (ASHP) Statement on Advocacy as a Professional Obligation states, “pharmacists should stay informed of issues that affect medication-related outcomes and advocate on behalf of patients, the profession, and the public. These issues may include legal, regulatory, financial, and other health policy issues, and this obligation extends beyond the individual practice site to their broader communities.”³

Other healthcare professions have similar statements. The American Medical Association (AMA) Code of Medical Ethics states that “physicians, individually and collectively through their professional organizations and institutions, should participate in the political process as advocates for patients (or support those who do) so as to diminish financial obstacles to access health care,” and that “the medical profession must work to ensure that the societal decisions about the distribution of health resources safeguard the interests of all patients and promote access to health services.”⁴ The American Nurses Association (ANA) Code of Ethics with Interpretive Statements states that “nurses must lead collaborative partnerships to develop effective public health legislation, policies, projects, and programs that promote and restore health, prevent illness, and alleviate suffering.”⁵ These statements indicate how these professions view advocacy not only as something which is inherent to each profession, but something which extends beyond being an advocate for an individual patient and involves advocating for policy and societal changes.

Being a successful pharmacy advocate requires an understanding of the legislative and regulatory framework which impacts the practice of pharmacy and the medication use process. Important to understand is the relationship between legislation and regulation, which starts with the structure of the government. The executive branch is in charge of carrying out the laws created by the legislative branch, and is made up by the President, Vice President, the President's Cabinet, and most federal agencies. The Cabinet is an advisory body appointed by the President, which includes the secretaries of the fifteen executive departments of the federal government.⁶ Notable cabinet positions with healthcare oversight include the Secretary of Health and Human Services and the Secretary of Veterans Affairs (VA). The executive branch also enjoys broad regulatory power over healthcare through various federal agencies. The Food and Drug Administration (FDA), Centers for Medicare and Medicaid Services (CMS), Health Resources and Services Administration (HRSA), and Centers for Disease Control and Prevention (CDC) are all examples of agencies impacting healthcare which roll up under the executive branch. It is important to note that while the executive branch runs these agencies, the authority for these relationships comes from laws passed by the legislative branch (i.e. Congress). If agencies have regulatory authority over an issue, they can use a rule making process to make changes. However, sometimes agencies may require new legislation to have authority over an issue. The judicial branch of the government impacts healthcare as well, with courts in recent years hearing many challenges to healthcare related laws on issues such as access to care, the Affordable Care Act, abortion restrictions, and pharmacy benefit managers.

Another issue to keep in mind as a pharmacy advocate is state versus federal issues. The practice of pharmacy is regulated at the state level through state laws and healthcare agencies and licensing boards. When advocating for any issue, it is crucial to know if the proposed change will require new laws or new rules, and if the issue is a state or federal issue. Not only do pharmacists have an obligation to be advocates, but pharmacists also have a history of successful advocacy. Collaborative practice agreements (CPAs), pharmacy technician immunization authorization, state-level provider status for pharmacists, and

legislation around drug shortages are all examples of successful advocacy efforts led by pharmacists through grassroots efforts.⁷ These examples demonstrate how pharmacists can impact patient care through advocacy.

Case

Scenario 1.53.1

You are an emergency department pharmacist working at an inner-city hospital where you see many patients who develop complications when they are unable to afford their medications. You were discussing this frustration with a friend who is a nurse at a local long-term care facility. They mention that they waste dozens of bubble packs of medications daily when patients change doses, change locations, discharge, or die. You want to find a way to get these wasted medications to people who need them.

In your searching, you come across National Conference of State Legislatures (NCSL) information about currently existing medication repositories that do exactly this. These programs allow for unused medications to be repurposed for other patients. As of 2018, NCLS has identified that 21 states and Guam have functioning medication repository programs.⁸ Some of these programs have provided millions of dollars of medications to tens of thousands of patients across their state.

Case Questions

1. At the federal level, the website www.regulations.gov allows advocates to search for issues and to provide comment. Based on the NCSL report, you find most medication repository programs operate at a state level, so coming up with this program will involve advocacy at the state level to establish something similar within your state. How would you determine what your current laws are related to medication repositories?
2. Based on this NCSL report, identify and research one currently operating state repository and identify some of their characteristics and metrics of success.
3. If the state Board of Pharmacy can make this change, how can the pharmacist advocate for it?
4. If the state Board of Pharmacy does not have the authority to make this change, a change in legislation will likely be required. Identifying the appropriate members of congress will be the next step. Who are the individuals who represent you and which state committees would be the most helpful in furthering this bill?
5. Who, outside of legislators themselves, can help secure this legislative change? Are there any national pharmacy organizations that have policies in support of medication repositories?
6. Once appropriate legislators are identified, what are the different methods that may be used to get in contact with them and advocate for change?
7. Drafting the message to a legislator is a critical part to advocacy. What would an appropriate brief email look like to a legislator regarding medical repositories?
8. What are some strategies for advocating directly to elected officials?

Patient Approaches and Opportunities

When drafting an email, phone script or another advocacy message, several key components will help a message be effectively delivered. First, introduce yourself and your current role. Healthcare professionals hold power and have the potential to be strong advocates for their patients. Pharmacists are experts in evidence-based medicine, they understand the healthcare system, they see many of the areas where patients fall through the cracks and are motivated by professional ethics to have the patient's best interest at heart. As a highly trusted profession, providing your message as a pharmacist gives you power and influence within a room of policy makers.⁹ Second, state why an issue is important and your relationship to the issue. This relationship can come from personal experience, experience with patients or other experiences from professional training or work. Third, ask for action. Ask for direct support, for their signature on a bill, for them to publicly speak out about an issue. Ensuring they have a tangible way to act on this important information that was just provided to them is crucial. Fourth, if this is a conversation- provide adequate time to listen, answer questions, address concerns, find the congresspersons relationship to this issue. The American Psychological Association has laid out guidance that can be applied to other issues within pharmacy or healthcare.¹⁰

Author Commentary

While learning all of this, one important resource is professional organizations. They can help identify the correct path for change on an issue and can also help to ensure the profession has a consistent message which is so important in dealing with elected officials. National pharmacy organizations include APhA, ASHP, the American College of Clinical Pharmacy (ACCP), the College of Psychiatric and Neurologic Pharmacists (CPNP), and the Academy of Managed Care Pharmacy (AMCP). Many states have state-specific chapters of these organizations. The size of these groups and the impact of the individuals within these interstate groups give them more sway when it comes to developing state or federal policy. These groups try to influence policies by putting pressure on elected officials, like during pharmacy legislative days, or by providing information to these policy makers to help create better informed policies. They can also educate their members on political actions they can take to further the interest of the interest group. Examples include voting on state legislation that expands the scope of practice of pharmacists.

Important Resources

Related chapters of interest:

- The “state” of things: Epidemiologic comparisons across populations
- Prescription for change: advocacy and legislation in pharmacy

External resources:

- Websites
 - Regulations.gov. www.regulations.gov
 - Ballotpedia. Who represents me? https://ballotpedia.org/Who_represents_me
 - American Pharmacists Association. APhA advocacy issues. <https://aphanet.pharmacist.com/apha-advocacy-issues>
 - American Society of Health-System Pharmacists. Advocacy. <https://www.ashp.org/Advocacy-and-Issues/Advocacy>
 - Kaiser Family Foundation. A reconfigured U.S. Supreme Court: implications for health policy. <https://www.kff.org/health-reform/issue-brief/a-reconfigured-u-s-supreme-court-implications-for-health-policy/>
- Journal articles
 - McDonough RP. Advocacy: an essential skill for all pharmacists. *Pharmacy Today* 2014;20(3):P42. [https://www.pharmacytoday.org/article/S1042-0991\(15\)30953-1/pdf](https://www.pharmacytoday.org/article/S1042-0991(15)30953-1/pdf)

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Glossary and Abbreviations

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1.54: The great undoing- a multigenerational journey from racism to social determinants of health

Learning Objectives

At the end of this activity students will be able to:

- Discuss the intersection of systemic racism with social determinants of health
- Propose pharmacists' approach to addressing social determinants of health and systemic racism in a clinical practice environment
- Identify patient-specific variables relevant to the impacts of systemic racism on social determinants of health

Introduction

The COVID-19 pandemic called attention to the need to revisit systemic racism and its influences on social determinants of health (SDH/SDOH) within the United States. *Healthy People 2030* defined SDH/SDOH as the “*conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.*”¹ According to Gee and colleagues, systemic racism is “*the macro-level systems, social forces, institutions, ideologies, and processes that interact with one another to generate and reinforce inequities among racial and ethnic groups.*”² These include policies and practices that propagate racial inequities and health disparities, and subsequently impacts the living conditions and the clinical, economic, and humanistic outcomes of the populations. Consequently, systemic racism has been described as “*a public health emergency and a root cause of social determinants of health.*”³

Health disparities are negative (and preventable) differences in health outcomes between groups of people; these are widely connected with and created by systemic racism for the minoritized and marginalized patient populations. The term “minoritized” is used to emphasize the social oppression that categorizes individuals from the minority populations into racialized hierarchy, thereby differentially delegating advantages and disadvantages to various groups in society. The term “marginalized” is used in this context to illustrate the powerlessness of these minoritized populations that experience disparities due to their SDH because of systemic racism.

Minoritized and marginalized populations experience stress due to racism, which has hazardous and harmful health impacts. Empirical research has demonstrated that self-reported discrimination is inversely correlated with good mental health. Indeed, exposure to racism increases the risk of depressive symptoms and psychological distress, as well as formally diagnosed depressive and anxiety disorders.⁴ Parental exposure to racism can even result in adverse outcomes for children related to mental health symptoms and disorders.⁴ Physiological impacts of experiencing racism are also present, with documentation of hemodynamic and vascular stress responses evident purely from the anticipation of prejudice in social interactions.⁵ These impacts create the significant health disparities experienced by minoritized and marginalized populations in terms of disease morbidity, mortality, disability and injury.⁶

Pharmacists can play a role in addressing SDH/SDOH and dismantling systemic racism, beginning with self-awareness and cultural competency. They can engage colleagues and trainees in conversations about our roles as healthcare professionals, including education, advocacy, community engagement, research, empowerment, and leadership. In the clinical setting, pharmacists can discuss with patients how racism and SDH/SDOH may be impacting their care and goals, promote exposure and learning about dermatological disorders on skin of different colors, confront harmful stereotypes from discredited race science that impact quality of care, and work to earn the trust of communities who have experienced historical and current harms in their medical care.

Case

Scenario 1.54.1

You are an ambulatory care pharmacist working in a medically underserved community consisting of mostly racial and ethnic minority populations.

CC: “I’m having a hard time catching my breath”

Patient: GW, a 58-year-old Haitian immigrant (64 in, 97.1 kg) with COPD, arrived at the clinic today and is in the waiting room. You could hear her wheezing very loudly. She is on portable oxygen at 2 L/min via the nasal cannula.

HPI: GW received a prescription two weeks ago for fluticasone/salmeterol (Advair Diskus), umecclidinium (Incruse Ellipta) and albuterol HFA (Proventil HFA). However, she was unable to pick up any of these from the pharmacy due to cost concerns.

PMH: HTN; mixed HLD; chronic systolic heart failure; COPD; T2DM; recurrent cerebrovascular accidents (embolic); thrombosis of precerebral artery

FH:

- Mother: deceased (lung cancer); HTN, mixed HLD, diabetes, stroke
- Father: deceased (stroke); mixed HLD, diabetes
- Brother (living): mixed HLD, prostate cancer
- Son (age 22): asthma
- Two daughters (ages 28 and 32): asthma

SH:

- 96 pack-year smoking history
 - Quit cigarettes two years ago
 - Uses smokeless tobacco three times daily
- Drinks two bottles of beer daily

Surgical/procedural history:

- Right cardiac catheterization (four years ago)
- C-section x 2
- Coronary angioplasty with stent placement

ROS:

- Decreased range of motion on right shoulder
- Swelling of right arm with swelling and decreased strength
- Posterior tibial pulse are +1 on both left and right sides

VS:

- BP 120/70 mmHg
- HR 75 bpm
- Temp 98.6°F
- Pulse ox 98% on RA

Labs Drawn at last visit one month ago:

Parameter	Value	Normal range
HgbA1c	8.4%	<6%

Parameter	Value	Normal range
Triglycerides	158 mg/dL	<150 mg/dL
Total cholesterol	260 mg/dL	<200 mg/dL
HDL	29 mg/dL	<39 mg/dL
LDL	232 mg/dL	≤100 mg/dL
Urine microalbumin	694.9 mg/L	<20 mg/L
eGFR	107 mL/min/1.73 m ²	≥60 mL/min/1.73 m ²
CO2	24 mmol/L	22-31 mmol/L

Medications (all oral unless specified otherwise):

- Proventil HFA 90 mcg/actuation 2 puffs every four hours PRN wheezing or SOB
- Advair Diskus 500-50 mcg/dose inhaler 1 puff twice daily
- Incruse Ellipta 62.5 mcg/actuation inhaler 1 puff once daily
- Praluent 150 mg/mL pen injector subcutaneously every two weeks
- Insulin NovoLog 8 units subcutaneously three times a day with meals
- Eliquis 5 mg twice daily
- Brilinta 90 mg twice daily
- Entresto 49-51 mg twice daily
- Metformin 1000 mg twice daily
- Jardiance 10 mg once daily
- Rosuvastatin 40 mg once daily at bedtime

SDOH: GW's house is located on 17-acre farmland in a rural community, which has no sidewalks and no public transportation; she has lived there for the past 25 years. Prior to moving to the rural area, GW worked as a waitress in an urban area for about 10 years.

Additional context: GW has insurance coverage but worries about her co-pays, especially for some medications, since they seem to keep changing year to year. She reads well, has good health literacy, and overall understands her conditions and that the medications help her. Nonetheless, she is overwhelmed by her medications and how all this fits into her daily lifestyle while she also must take care of her farm. She has a car and can drive to the clinic but shares this with some other neighbors in the community so they, too, can make their clinic appointments. GW also enjoys her time with her faith-based community that is strong and relies on them for support and strength.

Case Questions

1. What social determinants of health might impact GW?
2. What are some questions you may ask GW to better learn about the social factors in their life?
3. How can you as a practitioner better engage the community in learning about barriers and opportunities to care that is unique to the patients you serve? *Hint: use the following websites to assist:*
 - a. <https://www.cdc.gov/nccdphp/dch/programs/healthycommunitiesprogram/tools/pdf/sdoh-workbook.pdf>
 - b. <https://www1.nyc.gov/assets/doh/downloads/pdf/dpho/race-to-justice-action-kit-language-use-guide.pdf>
 - c. <https://www1.nyc.gov/assets/doh/downloads/pdf/dpho/race-to-justice-action-kit-communication-tips.pdf>
4. Using the above reference guides, identify 1-2 priorities that you can address immediately to address some social determinants of health at an individual/pharmacy/local community level.
5. In determining next steps, create SMARTER (Specific, Measurable, Achievable, Realistic, Timely, Equitable) goals that can help you work towards addressing health inequities within your communities or patients.

Author Commentary

Understanding the past and present implications of historical discrimination against minoritized individuals is an important step for pharmacists and student pharmacists in addressing systemic racism and mitigating health disparities. Systemic racism is the most profound and pervasive form of racism that oftentimes is difficult to recognize without intentionality and raised awareness.

Numerous historical examples of racism in healthcare are known. However, this same racism and bias continues today slowing our progress towards health equity, which is the attainment of the highest level of health for all people and requires valuing everyone equally. For everyone to be valued equally, superiority and inferiority ideologies must be deconstructed. Also understanding the social determinants of health and how they contribute to disproportionate poor health outcomes in minoritized groups is critical for pharmacists and student pharmacists. Consistent interpersonal work such as self-awareness assessment, checking biases, education, growth, and development in diversity, equity, inclusion and anti-racism is encouraged.

While systemic racism has emerged as a conversation following events of the Black Lives Matter protests in response to continued police brutality, specifically towards Black people in 2020, it has been present in conversations among marginalized communities for quite some time. Systemic racism is rooted in US history and historic policies and practices that continue to perpetuate racial disparities across health, education, income inequality, among other social factors. Faculty and students should start to engage in dialogue around systemic racism and how it impacts not only our patients, but also our colleagues and professional community. This is a longitudinal discussion that must be continued in understanding the knowledge, but also the perceptions and attitudes we are all conditioned with through our own socialization, experiences, and messages we receive via the media and across the various institutions we engage with (e.g., educational systems, faith-based groups, community organizations, healthcare systems, etc.). Being aware of implicit biases we all have will help our professional community bring this awareness to our interactions with each other and our patients. Over time, we can start to unravel some of the awareness around systemic racism, identify gaps and opportunities where pharmacists may be able to screen for social determinants of health and ask questions to better understand our patients' lived experiences without making sweeping assumptions.

Patient Approaches and Opportunities

Minoritized patients with uncontrolled disease states and non-adherence to medications and lifestyle recommendations may be viewed as difficult patients and may be further marginalized by healthcare professionals through sub-par patient interactions. Pharmacists and student pharmacists can take responsibility to deepen their awareness of systemic racism, social determinants of health and how these factors affect their patients.

Practitioners should use open-ended questions like, "what barriers do you have that may cause you to forget to take your medicines?" to better identify patients' needs. Pharmacists and student pharmacists should work collaboratively with patients to better understand factors that are contributing to poor health outcomes. Understanding a patient's situation may be a more important factor in disease state management than the disease itself. Building a trusting, non-judgmental relationship encourages trust between the patient and provider and can often be the key to better shared decision-making and ultimately better health outcomes.

Important Resources

Related chapters of interest:

- [More than just diet and exercise: social determinants of health and well-being](#)
- [Communicating health information: hidden barriers and practical approaches](#)
- [Plant now, harvest later: services for rural underserved patients](#)
- [Equity for all: providing accessible healthcare for patients living with disabilities](#)
- [Laying the foundation for public health priorities: Healthy People 2030](#)
- [You say medication, I say meditation: effectively caring for diverse populations](#)
- [Experiences of a Caribbean immigrant: going beyond clinical care](#)
- [Uncrossed wires: working with non-English speaking patient populations](#)

External resources:

- Websites:
 - [Healthy People 2030](#). Social determinants of health. <https://health.gov/healthypeople/objectives-and-data/social-determinants-health>
 - Harvard University. Project Implicit. <https://implicit.harvard.edu/implicit/takeatest.html>
- Games:
 - The Last Straw: a board game on the social determinants of health. <http://www.thelaststraw.ca/>
 - Play Spent: an interactive game to understand social determinants of health. www.playspent.com
- Videos:

- Cequea A. Systemic racism explained. *act.tv*. https://www.youtube.com/watch?v=YrHIQIO_bdQ. Uploaded April 16, 2019.
- For the Sake of All: Two lives of Jasmine. *Nine PBS*. <https://www.youtube.com/watch?v=qMQ42LPznj4>. Uploaded August 8, 2014.
- National Association of Counties and City Health Officials. Unnatural causes, Episode 2: when the bough breaks – Kimberly Anderson’s story. *California Newsreel*. 2008. Presented by the National Minority Consortia of Public Television. As seen on PBS. https://unnaturalcauses.org/video_clips_detail.php?res_id=210

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Glossary and Abbreviations

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GLOSSARY

C

Child maltreatment | physical, emotional, or sexual abuse of a child or neglect (the failure to provide for a child's basic physical, medical, emotional, or educational needs, or failing to appropriately supervise a child).

Contraceptive desert | lacking reasonable access to a health center offering the full range of contraceptive methods. Reasonable access is at least one clinician or health center that is able to provide all contraceptive methods for every 1,000 women in need of publicly funded contraception.

Cross cultural care | learning how to transcend one's own culture in order to form a positive therapeutic alliance with patients from other cultures

Culture | the integrated pattern of human behaviors that includes thoughts, communications, languages, practices, beliefs, values, customs, courtesies, rituals, manners of interacting and roles, relationships and expected behaviors of a racial, ethnic, religious or social group; and the ability to transmit the above to succeeding generations

D

Disaster | a sudden, calamitous event that seriously disrupts the functioning of a community or society, causing human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources

E

Elder abuse | intentional acts or the failure to act by a caregiver or another person in a relationship involving an expectation of trust that causes or creates serious physical, emotional, sexual, or financial harm to an older adult

Epidemiology | the study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems

Equity | the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically

G

Global North | a group based on a geographic and economic divide, inclusive of relatively richer countries within the global sphere; includes the United States, Canada, Europe, developed parts of Asia (Japan, Hong Kong, Singapore, South Korea and Taiwan) as well as Australia and New Zealand

Global South | a group based on a geographic and economic divide, inclusive of relatively poorer countries within the global sphere; includes countries mostly located in tropical regions and in the Southern Hemisphere

H

Health | a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

Health disparities | a particular type of health difference that is closely linked with social, economic and/or environmental disadvantage

Health equity | fair distribution of health determinants, outcomes, and resources within and between segments of the population, regardless of social standing

Health literacy | the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions

Healthy People | a US government program from the ODPHP that identifies US health improvement priorities and sets 10-year goals and targets

Herd immunity | the circumstance in which a sufficient proportion of the population is protected from a disease such that transmission among members is unlikely is insufficient to protect unvaccinated members

I

Information literacy | being able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information

Interprofessional education | when two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes

Intimate partner violence | Physical violence, sexual violence, stalking, and psychological aggression (including coercive tactics) by a current or former intimate partner.

P

Pharmacoepidemiology | the study of the use and effects/side-effects of drugs in large numbers of people with the purpose of supporting the rational and cost-effective use of drugs in the population thereby improving health outcomes

Preventive medicine | delivery of medical care that is focused on the health of individuals, communities, and defined populations in order to protect, promote, and maintain health and well-being and to prevent disease, disability, and death

S

Social determinants of health | the conditions in which individuals live, work, and play that can affect health outcomes

T

Telepharmacy | the provision of services by pharmacists to patients or their caregivers through the use of technology to provide cost-effective routine and highly specialized clinical services in remote areas where the need may be greatest

Abbreviations

ACIP: Advisory Committee on Immunization Practices

ACP: American College of Physicians

ADA: American Diabetes Association

ADE: Adverse drug events

ADHD: Attention deficit hyperactivity disorder

AHRQ: Agency for Healthcare Research and Quality

AIDS: Acquired immunodeficiency syndrome

APhA: American Pharmacists Association

ASHP: American Society of Health-System Pharmacists

ASTHO: Association of State and Territorial Health Officials

BG: Blood glucose

BID: Twice daily

BP: Blood pressure

BPM: Beats per minute

CC: Chief complaint

CDC: Centers for Disease Control and Prevention

CKD: Chronic kidney disease

CMR: Comprehensive Medication Review

CMS: Centers for Medicare & Medicaid Services

COPD: Chronic obstructive pulmonary disease

COVID-19: Coronavirus disease 2019

CPA: Collaborative practice agreement

CT: Computed tomography

CTA: Computed tomography angiography (also known as angiogram)

CV: Cardiovascular

CVA: Cerebrovascular accident

DKA: Diabetic ketoacidosis

DM: Diabetes mellitus

DOT: Directly observed therapy

DRIA: Diabetes and Ramadan International Alliance

DSM-5: Diagnostic and Statistical Manual of Mental Disorders- 5th edition

ED: Emergency department

eDOT: Electronic directly observed therapy

EHR: Electronic health record

EKG: Electrocardiogram (also known as ECG)

EPT: Expedited partner therapy

ESKD: End stage kidney disease

ESRD: End stage renal disease

FA: Fentanyl analog

FBG: Fasting blood glucose

FBO: Faith based organizations

FDA: Food and Drug Administration

FGC: Female genital cutting

FGM: Female genital mutilation

FH: Family history

FQHC: Federally-qualified health center

GERD: Gastroesophageal reflux disease

GLP-1: Glucagon-like peptide-1

HCV: Hepatitis C virus

HD: Hemodialysis

HEENT: Head, eyes, ears, nose and throat

HgA1c: Glycosylated hemoglobin

HHS: (US Department of) Health and Human Services

HHS: Hyperosmolar, hyperglycemic syndrome

HIV: Human immunodeficiency virus

HLD: Hyperlipidemia

HPI: History of present illness

HR: Heart rate

HTN: Hypertension

IDF: International Diabetes Federation

IIS: Immunization Information Systems

IMF: Illicitly manufactured fentanyl

IPE: Interprofessional education

IPEC: Interprofessional Education Collaborative

IPV: Intimate partner violence

KFF: Kaiser Family Foundation

LTBI: Latent tuberculosis infection

LRN: Laboratory Response Network

MAI: Medication Appropriateness Index

MAT: Medication-assisted treatment

MDR: Multi-drug resistant

MDR-TB: Multi-drug resistant tuberculosis

MI: Myocardial infarction

MOU: Memorandum of understanding

MOUD: Medications for opioid use disorder

MRI: Magnetic resonance imaging

MSM: Men who have sex with men

MTM: Medication Therapy Management

N/A: Not available

NACDS: National Association of Chain Drug Stores

NASPA: National Alliance of State Pharmacy Associations

NIHSS: National Institutes of Health Stroke Scale

NKDA: No known drug allergies

NT/ND: Non-tender, non-distended

OAA: Oral anticancer agent

ODPHP: Office of Disease Prevention and Health Promotion

OTC: Over-the-counter

OTP: Opioid treatment program

OUD: Opioid use disorder

PATH: Partnership Assessment Tool for Health

PD: Peritoneal dialysis

PDMP: Prescription drug monitoring program

PERT: Pharmacy emergency response team

PMH: Past medical history

PrEP: Pre-exposure prophylaxis

PO: Per oral

POD: Point of dispensing

POC: Point of care

PPD: Pack per day

PPD: Purified protein derivative

PRN: As needed

ROS: Review of systems

RR: Respiratory rate

SBIRT: Screening followed by brief interventions

SDG: Sustainable Development Goals

SDH/SDOH: Social determinants of health

SFU: Sulfonylureas

SGLT2i: Sodium-glucose co-transporter 2 inhibitors

SH: Social history

SNS: Strategic National Stockpile

SO: Standing order

SpO₂: Oxygen saturation

SQ: Subcutaneously

STD: Sexually transmitted disease

STI: Sexually transmitted infection

STOPP/START: Screening Tool of Older People's Prescriptions/Screening Tool to Alert to Right Treatment

SUD: Substance use disorder

Temp: Temperature

T2DM: Type 2 diabetes mellitus

TB: Tuberculosis

Tdap: Tetanus, diphtheria and acellular pertussis

TICI: Thrombolysis in cerebral infarction scale

TID: Three times daily

TTE: Transthoracic echocardiogram (also known as an echo)

TZD: Thiazolidinones

UN: United Nations

US: United States

USPSTF: United States Preventive Services Task Force

VS: Vital signs

WHO: World Health Organization

WNL: Within normal limits

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