PHARMACOTHERAPY

A Pathophysiologic Approach

TENTH EDITION

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Chapter e1: Health Literacy and Medication Use

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INTRODUCTION

KEY CONCEPTS

- 1 Limited health literacy is common and must be considered when providing medication management services.
- 2 Some groups of people are at higher risk for having limited literacy skills, but in general, you cannot tell by looking.
- 3 Patients with limited health literacy are more likely to misunderstand medication instructions and have difficulty demonstrating the correct dosing regimen.
- 4 Limited health literacy is associated with increased healthcare costs and worse health outcomes, including increased mortality.
- 5 Despite numerous efforts to improve safe medication practices, current strategies have been inadequate, and this may have a larger impact in patients with limited literacy.
- 6 Most printed materials are written at higher comprehension levels than most adults can read.
- 7 The United States Pharmacopeia has set new standards for prescription medication labeling to minimize patient confusion.
- 8 Several instruments exist to measure health literacy, but some experts advocate “universal precautions” under which all patients are assumed to benefit from plain language and clear communication.
- 9 Obtaining a complete medication history and providing medication counseling are vital components in the medication management of patients with limited health literacy.

Every day, thousands of patients are not taking their medications correctly. Some take too much.

Others take too little. Some use a tablespoon instead of a teaspoon. Parents pour an oral antibiotic suspension in their child's ear instead of giving it by mouth because it was prescribed for an ear infection. Others are in the emergency department because they did not know how to use their asthma inhaler. It is not a deliberate revolt against the doctor's orders but rather a likely and an unfortunate result of a hidden risk factor—limited health literacy.

1 *Literacy*, at the basic level, is simply the ability to read and write. When these skills are applied to a health context, it is called *health literacy*, but health literacy is more than just reading and writing. *Health literacy*, as defined by the Institute of Medicine (IOM), is "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions." A growing body of evidence associates low health literacy with less understanding, worse outcomes, and increased cost. These poor outcomes have led this topic to receive national attention. Health literacy has been made "a priority area for national action" by the IOM[1,2] and Healthy People 2020.[3] As a result, federal policy initiatives promoting health literacy continue to be highlighted in Healthy People 2020, the Patient Protection and Affordable Care Act of 2010, and the Plain Writing Act of 2010.[4] A National Action Plan to Improve Health Literacy (**Table e1-1**) has also been developed by the Department of Health and Human Services (HHS).[5] Likewise, the Agency for Healthcare Research and Quality (AHRQ),[6,7] the National Institutes of Health (NIH),[8] and Centers for Disease Control and Prevention (CDC)[9] have each dedicated websites to this topic and have provided funding to support studies and interventions that are specifically relevant to health literacy. Additionally, state and private sector organizations, such as America's Health Insurance Plans (AHIP) and the American College of Physicians (ACP) Foundation, have led efforts to improve health literacy following the IOM's call to action.[10] Indeed, health literacy should be a national priority for the medical community as its consequences are far-reaching and cross-cutting.

TABLE e1-1 Goals of the National Action Plan to Improve Health Literacy[5]

Goal 1	Develop and disseminate health and safety information that is: • accurate • accessible • actionable
Goal 2	Promote changes in the healthcare system that improve: • health information • informed decision-making • communication • access to health services

Goal 3	Incorporate accurate, standards-based, and developmentally appropriate health and science information and curricula in child care and education through the university level
Goal 4	Support and expand local efforts to provide: • adult education • English language instruction • culturally and linguistically appropriate health information services in the community
Goal 5	Build partnerships, develop guidance, and change policies
Goal 6	Increase basic research and the development, implementation, and evaluation of practices and interventions to improve health literacy
Goal 7	Increase the dissemination and use of evidence-based health literacy practices and interventions

More than one of every three American adults has difficulty understanding and acting on health information.[11] Patients with limited health literacy have less knowledge about how to manage their disease;[12] they misunderstand dosing instructions and warning labels on medication containers;[13,14] they are less likely to read or even look at medication guides;[15] their ability for medication management is limited as these persons are less able to identify or distinguish their medications from one another;[16,17] and they are less able to use a metered-dose inhaler (MDI) properly.[18] Limited health literacy skills have also been documented in caregivers of seniors[19] and in parents of children.[20] There is no question that limited health literacy is associated with adverse health outcomes[21] including an increased mortality rate[22] and increased healthcare costs.[23]

Current strategies for safe medication use have not been effective for the general population and are likely less useful for persons with limited health literacy. All health professionals need to acknowledge that limited health literacy is common and may be a barrier to improving health outcomes in their patients. They need to implement strategies for clear communication in order to enhance appropriate medication management. This chapter will review what is known about health literacy and present the evidence available as it relates to medication use.

Clinical Controversy…

Is there a shared meaning of *health literacy*? While the IOM has provided a concise definition of health literacy, some argue that the field of health literacy has become so dynamic that experts in the field do not have a shared meaning for this term.

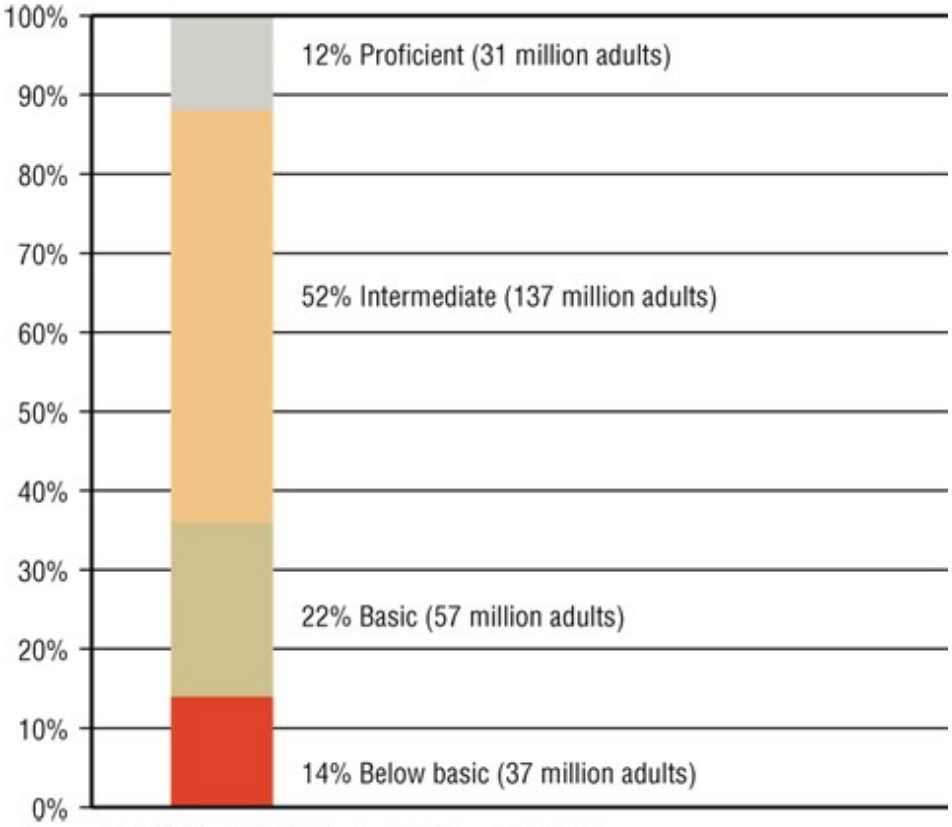
PREVALENCE

According to the National Assessment of Adult Literacy (NAAL), 36% of Americans have limited health literacy skills, meaning that out of four levels, they function at the lowest two.[11] The NAAL

survey was administered randomly to 19,000 adults (greater than or equal to 16 years of age) across the United States and final results were reported in four skill levels: below basic, basic, intermediate, and proficient. Fourteen percent of Americans had health literacy skills that were considered below basic, 22% were at the basic level, 52% were at intermediate, and only 12% were considered proficient (**Fig. e1-1**). The *below basic* level is substantially below that which is necessary to function within the healthcare setting. Individuals in the *basic* level have skills to perform simple everyday literacy activities. They can read, understand, and use information in short and "simple" documents. *Intermediate* literacy levels include skills necessary to perform moderately challenging literacy activities. (Note that the NAAL considered interpreting prescription drug labels an intermediate level task.) Individuals in the *proficient* level would have the least difficulty navigating the healthcare system. This group can analyze, integrate, and synthesize complex information. Approximately 3% of people surveyed were excluded from the analysis due to language barriers or cognitive disabilities. Thus, if you add this 3% to the 36% of people that measured at the two lowest levels and consider the estimated American population of 2020, approximately 130 million Americans have limited health literacy.[11,24]

FIGURE e1-1

Percent of adults in each health literacy level. Percentages are from Kutner et al.[11] The values in parentheses estimate the number of American adults (greater than or equal to 15 years of age) in each literacy level, based on 2015 population projections,(from *http://www.census.gov/population/projections/data/national/2012/summarytables.html*).



Source: J.T. DiPiro, R.L. Talbert, G.C. Yee, G.R. Matzke, B.G. Wells, L.M. Posey: Pharmacotherapy: A Pathophysiologic Approach, 10th Edition, www.accesspharmacy.com

GROUPS AT HIGH RISK

2 It is generally not possible to tell if someone has limited health literacy simply by looking at or talking to them. Many persons with limited health literacy learn to hide it very well and many are known to keep this secret to themselves. In one study, two-thirds of persons surveyed (68%) admitted to not telling their spouse about their reading difficulties and more than one-half had not told their children.[25] In a study of internal medicine residents and students, few of them recognized low literacy as a potential factor in patient nonadherence and hospital readmission.[26] It is important to note that health literacy is a context-dependent skill, meaning that people who function well in one environment may still struggle when presented with healthcare tasks. Thus, even people with adequate education levels may find it difficult to navigate the healthcare system due to lack of familiarity with the context. While it is important to remember that people of all ages, nationalities, and income groups are at risk for limited health literacy, there are some groups that are at particularly high risk that should be mentioned (**Table e1-2**).[11] This information can help assess the potential risk of limited health literacy in the patient population being served.

TABLE e1-2 Groups at High Risk of Limited Health Literacy

Age 65 or older
Minorities

Spoke another language prior to formal education

Have less than a high school diploma

Live at or below the poverty line

Rate their overall health as poor

Have Medicaid, Medicare, or no insurance

Data from reference 11.

As the Latino population in the United States continues to increase to over 28% as it is projected by 2060,[24] this group and those with limited English proficiency (LEP) are at a high risk for limited health literacy and inappropriate medication management. Not only do they have lower health literacy scores than the overall population,[11] but more than one-half of Latinos are known to have LEP.[27] Unfortunately, most pharmacies in the United States are not equipped with appropriate translation or interpreter services. In a telephone survey of 764 pharmacies, nearly 57% reported limited or no translation services available.[28] In fact, 45% of pharmacies admit to not being satisfied with their ability to communicate with patients that have LEP. In 2012, the United States Pharmacopeia (USP) set new standards for prescription container labeling and recommends that whenever possible, directions be provided in the patient's preferred language as well as English to minimize the risk of misinterpretation.[29]

Practices that serve Latinos or patients with LEP should be cognizant of their high risk and employ strategies for providing clear communication about appropriate medication management.

Children

What happens when adults with limited literacy become parents? Not surprisingly, a systematic review of the literature concludes that child and parent literacy seem to be associated with important health outcomes.[30] Similar to data found in adults, children with limited literacy had worse health behaviors. If their parents had limited literacy skills, these children had worse health outcomes. In a study of 1,500 parents, Medicaid-insured parents had less education than those with commercial insurance and were more likely to request unnecessary antibiotics for their children.[31] In asthmatic children, limited parental health literacy is associated with a greater incidence of emergency department visits, hospitalizations, missed school days, and greater use of rescue medications.[32] In another study, caregivers with low health literacy were more likely to report use of a nonstandardized dosing instrument.[33]

While interventions in general are lacking, there are more that target improvement in knowledge than outcomes. One intervention using pictograms, brief counseling and the teach-back method improved the likelihood of parents correctly dosing medicines and adhere to the regimen.[34] Similarly, parents with low health literacy were less likely to make a dosing error with infant acetaminophen after receiving text-plus-pictogram instructions compared to text only recipients.[35] As in the adult

population, effective interventions that improve outcomes and minimize health disparities are needed.

CONSEQUENCES

Table e1-3 provides a comprehensive list of studies to date evaluating health literacy and medication use. In particular, it provides a summary of the studies evaluating the effect of health literacy on medication knowledge and understanding, medication management, and medication adherence. One study evaluated the effect of health literacy on adverse drug events and found no association.[36]

TABLE e1-3 Studies Evaluating Limited Health Literacy and Medication Use

Citation and Literacy Measurement	Results
	Knowledge
Williams et al.[37] (TOFHLA)	Decreased understanding of how to take medicines: • Take on empty stomach → 65% incorrect • How many pills to take → 70% incorrect • How many refills left → 42% incorrect
Davis et al.[13] (REALM)	Decreased understanding of instructions on prescription labels: • Two times more likely to misunderstand
Davis et al.[14] (REALM)	Increased misinterpretation of drug warning labels: • Three to four times more likely to misinterpret
Fang et al.[38] (S-TOFHLA)	Decreased understanding of mechanisms and side effects: • Warfarin works by thinning blood → 30% incorrect • Bleeding/bruising most common → 51% side effect incorrect
Yin et al.[33] (TOFHLA)	Decreased awareness of weight-based dosing among caregivers of children: • 88.6% unaware
Marks et al.[39] (REALM)	Decreased medication knowledge including name, dose, indication, and side effects: • 80% had medication knowledge score (MKS) below the median

Citation and Literacy Measurement	Results
Mosher et al.[36] (REALM)	Decreased medication knowledge (name/indication): Health literacy level — % correct of names — Indications • Low — 32.2 — 61.8 • Marginal — 54.6 — 77.4 • Adequate — 60.8 — 81.4 *P* < 0.001 — *P* < 0.001
	Medication Management
Williams et al.[18] (REALM)	Decreased ability for proper use of metered-dose inhaler (MDI): • 88% with limited literacy had poor the MDI technique, compared with 48% of those with higher literacy levels
Davis et al.[14] (REALM)	Decreased ability to demonstrate correct dosing: • 65% could not demonstrate, “Take two tablets by mouth twice daily”
Persell et al.[17] (S-TOFHLA)	Decreased ability to name their medications: • 40.5% of those with limited health literacy vs 68.3% of other patients
Kripalani et al.[16] (REALM)	Decreased ability to identify all of their medications: • 10-18 times the odds of being unable to identify
	Adherence
	Decreased adherence
Kalichman et al.[40] (WRAT-3) (TOFHLA)	Increased nonadherence to antiretroviral therapies: • Three to four times more likely to be nonadherent in last 2 days
Graham et al.[41] (REALM)	Decreased adherence to antiretroviral medications: • 40% of those with limited health literacy vs 64% of other patients
Wolf et al.[42]	Increased likelihood to be nonadherent with antiretroviral therapies: • 3.3 times more likely to be nonadherent

Citation and Literacy Measurement	Results
Kripalani et al.[43] (REALM)	Decreased adherence to medication refills: • Two times more likely to be nonadherent
Noureldin et al.[44] (S-TOFHLA)	Decreased medication taking adherence: • 54.2% of those with inadequate health literacy vs 69.4% of other patients
Lindquist et al.[45] (S-TOFHLA)	More likely to have unintentional nonadherence after hospital discharge • 47.7% (inadequate HL) vs 20.5% (adequate HL), $p = 0.002$
Bauer et al.[46] [3-item screener]	Patients with diabetes had more time without sufficient pill supply to newly prescribed antidepressants: • 41% vs 36%, $p < 0.01$
Karter et al.[47] [single question]	Nonadherent patients more likely to report inadequate health literacy: • 51% vs 30%
Osborn et al.[48] (REALM)	Health literacy was associated with medication adherence: • r = 0.12, $p < 0.02$
Hironaka et al.[49]	**Increased adherence** Increased adherence to daily multivitamins by infant caregivers: • Two times as likely to report high adherence
Gatti et al.[50] (REALM)	**No effect on adherence** Health literacy is not independently associated with adherence: • 52.4% vs 50.1% (difference not significant)
Paasche-Orlow et al.[51] (REALM)	Low health literacy not associated with lower odds of adherence: • Adjusted odds ratio = 1.93 (not significant)
Mosher et al.[36] (REALM)	Health literacy is not associated with medication adherence: Health literacy level % of medications taken ($p = 0.14$) • Low 84

Citation and Literacy Measurement	Results
	• Marginal 80 • Adequate 77
Bains et al.[52] (REALM-R)	Health literacy was not significantly related to medication adherence
	Inconclusive effect on adherence
Gazmararian et al.[53] (S-TOFHLA)	Suggestive but not conclusive that low health literacy predicts poor refill adherence
Kripalani et al.[43] (REALM)	No consistent relationship found between health literacy and self-reported adherence

Decreased Knowledge and Understanding

A number of studies have shown that patients with limited health literacy have less knowledge about their disease and how to manage it. For example, among patients with diabetes, 94% of those with adequate health literacy knew the symptoms of hypoglycemia, compared with only 50% of those with inadequate health literacy.[12] Similarly, persons with limited health literacy did not know about factors that could lower blood pressure such as weight loss and exercise. Other studies have also correlated limited health literacy with less knowledge about asthma, reproductive health, human immunodeficiency virus (HIV) infection, discharge instructions, and heart health.[21]

Several studies also confirm the association between limited health literacy and decreased understanding of appropriate medication use.[13,14,15,33,37,38,40,54] A study to examine patients' ability to understand instructions on medication labels concluded that lower health literacy was independently associated with misunderstanding of instructions.[13] Patients with inadequate and marginal health literacy had a relative risk of 2.32 and 1.94 of misunderstanding label instructions, respectively.

Warning labels are routinely used with prescription medications, yet a recent study indicated that these labels may not be useful for patients with limited health literacy. In fact, patients with low health literacy have a three times greater likelihood of incorrect interpretation of prescription warning labels and have a potential for misuse of their medications.[14] For example, in the warning label that states, "Do not chew or crush, swallow whole," some patients were interpreting it as "chew pill and crush before swallowing." Another study found an association between limited health literacy and deficits in warfarin-related knowledge.[38]

Lastly, patients with limited health literacy have difficulty understanding medication guides, which are educational materials mandated for some products by the FDA, and most admit to never looking at them.[15]

Decreased Ability for Medication Management

3 Limited health literacy has also been associated with a decreased ability for "medication management"—the ability to self-administer a medication regimen as it has been prescribed.[16] Examples of functional skills necessary for medication management include correct identification of medications, opening the appropriate containers, proper selection of the correct dose, and timing of administration,[54] as well as appropriate use of containers such as MDIs, nasal sprays, and eye drops.

Studies indicate that patients with limited health literacy are unable to name or identify their own medications.[16,17] Persell and colleagues conducted a study to assess the relationship between health literacy and patient recall of their antihypertensive medications.[17] He found that only 40.5% of patients with inadequate health literacy were able to name any of their antihypertensive medications, compared to 68.3% of those with adequate health literacy. In this same study, inadequate health literacy was also associated with a greater number of unreconciled medications (64.0% vs 37.8%). Similarly, in another study, patients with inadequate literacy skills had 10 to 18 times the odds of being unable to identify all of their medications, compared with those with adequate literacy skills.[16]

In a study to determine the relationship of literacy to the MDI technique of asthma patients, researchers concluded that inadequate literacy was strongly correlated with improper MDI use.[18] Compared with patients with adequate health literacy, more patients with inadequate health literacy were unable to demonstrate proper MDI use (88% vs 48%).

Uncertain Effect on Medication Adherence

Results of studies evaluating the relationship between limited health literacy and medication adherence are conflicting. Several studies in patients using antiretroviral medications for treatment of HIV infection indicate that patients with limited health literacy are less likely to be adherent to their medications.[40,41,42] Persons with inadequate health literacy were more likely to have lower refill adherence,[43] decreased medication taking,[44] and more likely to have unintentional nonadherence after a hospital discharge.[45] In contrast, several studies concluded that health literacy is not independently associated with adherence,[36,50,51,52] another study showed a strong trend,[53] and yet another study actually found an increase in adherence.[49]

A major barrier to consolidating data from adherence studies is that there is no generally accepted "gold standard" for measuring medication adherence, making overall conclusions difficult. Further studies are needed to adequately determine the true relationship between health literacy and medication adherence.

Clinical Controversy…

What is the effect of limited health literacy on medication adherence? Current evidence is inconclusive regarding the overall effect that limited health literacy has on medication adherence. Some studies show that limited health literacy decreases adherence, others show it actually increases adherence, yet others show no effect. More research is needed to answer this question.

Worse Health Outcomes

The AHRQ has published two reports that summarize the literature available regarding the association between health literacy and outcomes.[55,56] In the first report, they identify most of the studies evaluated as being "fair or good," and overall, they report that there is an association between lower literacy and adverse health outcomes.[55] In one study evaluating the association of health literacy with diabetes outcomes, the investigators found that patients with limited health literacy have worse control of their diabetes and are more likely to report complications such as retinopathy and cerebrovascular disease.[57] In a recent study, the majority of patients with poorly controlled diabetes (A1c greater than 8%) were more likely to believe that their diabetes was well controlled if they had low health literacy. Thus, they may be less likely to make changes to improve control.[58]

The second AHRQ report reinforces the initial link between limited health literacy and worse health outcomes.[56] Patients with limited health literacy have a higher risk for emergency care use, less use of preventive services, poorer skills in taking medications, and more hospitalizations. Low health literacy was also found to be a significant, independent risk factor for hospital reutilization within 30 days after hospital discharge.[59] This can be costly since accountable care organizations will be reimbursed less for hospital reutilization within 30 days of discharge.

Unfortunately, inadequate health literacy has even been linked to increased mortality in community-dwelling elderly persons.[22] Baker and colleagues studied 3,260 Medicare managed-care enrollees to determine whether low health literacy independently predicted all-cause mortality. Crude mortality for persons with inadequate health literacy levels was more than twice as high as in those with adequate health literacy (39.4% vs 18.9%). Even after adjusting for confounding factors such as demographics, socioeconomic status, and baseline health, participants with inadequate health literacy had a hazard ratio of death of 1.52 compared with participants with adequate health literacy. The authors concluded that inadequate health literacy independently predicts all-cause mortality in community-dwelling elderly persons. A different study of older adults confirmed the increased risk of mortality in those with low health literacy (hazard ratio = 1.40).[60] In a cohort study of patients hospitalized for acute heart failure, low health literacy was associated with a 32% increased risk of death. This increase was found after adjusting for age, gender, race, insurance, highest level of education, hospital length of stay, and comorbid conditions.[61]

Increased Healthcare Costs

4 A systematic review concludes that the economic implications of limited health literacy are substantial.[23] Patients with limited health literacy tend to seek medical care when they are sicker, leading to higher use of emergent care and longer hospitalizations. Thus, it is no surprise that caring for persons with limited health literacy is associated with higher healthcare costs. At the health system level, limited health literacy may account for a 3% to 5% increase in total costs.[23] The increased cost at the individual patient level may range anywhere from $143 to $7,798. Howard and colleagues found that persons with inadequate health literacy incur higher healthcare costs and use medical services inefficiently, especially emergency department care.[62] Another approximation of the cost of limited health literacy to the American economy ranged from $106 billion to $238 billion

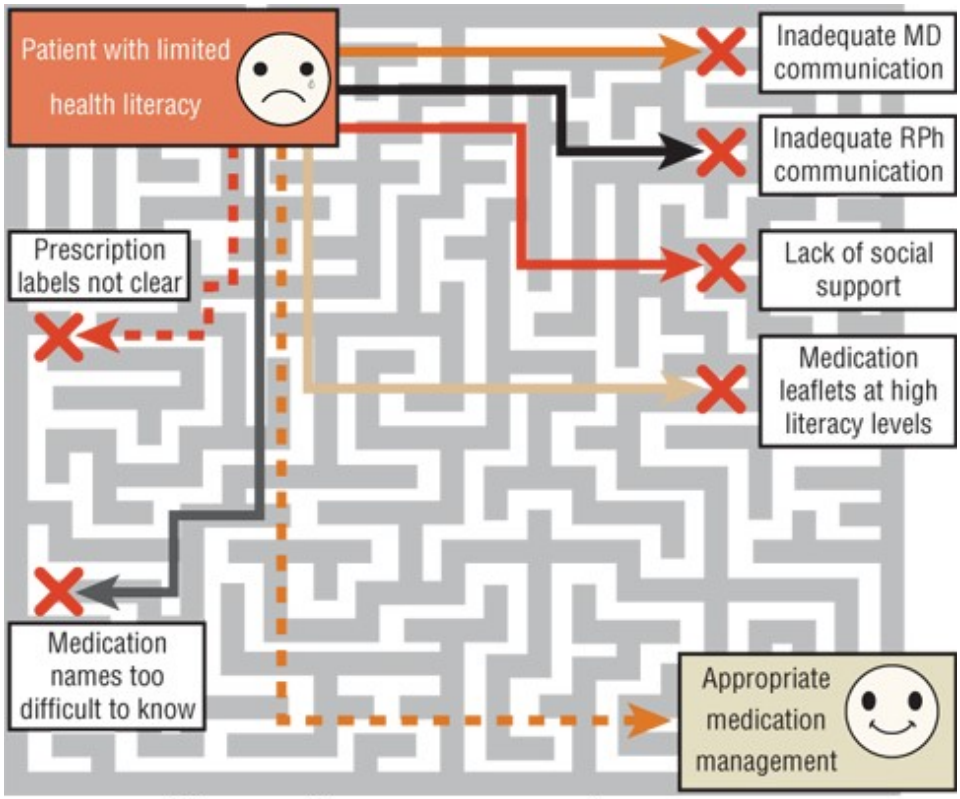
annually, equal to about 7% to 17% of all personal healthcare expenditures.[63] A large-scale study demonstrated higher healthcare costs in the Veterans Health Administration (VHA) patients. Of 92,749 veterans, the mean per patient cost for those with inadequate and marginal health literacy was significantly higher ($31,581) compared with the cost of those with adequate health literacy ($17,033). It is estimated that the healthcare cost of veterans with marginal and inadequate health literacy was $143 million dollars more over a 3-year period.[64] Victor Dzau, the president of the Institute of Medicine, stated that the lack of health literacy costs the United States more than $100 billion annually.[2]

SHORTCOMINGS OF CURRENT SAFE MEDICATION PRACTICES

5 Despite our most sophisticated efforts to encourage safe medication use, our current strategies have been insufficient and ineffective, especially for patients with limited health literacy. **Figure e1-2** depicts the maze of medication information that patients are expected to navigate and several of the barriers that patients with limited health literacy may encounter.

FIGURE e1-2

Medication information maze. Communication barriers and the complexity of current medication information make it difficult for a patient to achieve appropriate medication management. These barriers are even more significant in a patient with limited literacy skills. This figure depicts several of the barriers that patients may encounter in the process of obtaining medication information.



Source: J.T. DiPiro, R.L. Talbert, G.C. Yee, G.R. Matzke, B.G. Wells, L.M. Posey: Pharmacotherapy: A Pathophysiologic Approach, 10th Edition, www.accesspharmacy.com

Patient Information Leaflets

6 Numerous studies indicate that most health information handouts are written at a level far beyond that which an average adult can understand.[1] The average American adult reads at about the eighth grade level and most handouts exceed these levels. In a survey of 251 primary care adult patients, only 23% reported having ever looked at the accompanying medication guides.[62] Patients with lower literacy were less likely to have looked at the medication guides (16.7% vs 32.9%). Because of this, and the fact that the medication guides were written at the 11th and 12th grade level, the authors concluded that they probably were not useful to patients with limited literacy skills. Raynor and colleagues also found that consumer medication information handouts do not meet people's information needs.[65] People did not value the written information they received about medicines, and providing the leaflets did not increase their knowledge. People tended to want information that was tailored to them with a balance of both benefit and harm. They also wanted information before the drug was prescribed to decide if it was the right medicine for them; this is often not done. Overall, they found a gap between what the patients wanted and what the medicine leaflets provided.

Medication Labels

Poor medication labeling has been cited as a potential cause for medication errors. Indeed, the USP attributes about one-third of all medication errors to confusion with product labeling.[66] Shrank et al.

assessed 85 labels on pharmacy-dispensed medications for format, context, and variability.[67] Their evaluation concluded that the most prominent portion of the label included the name of the pharmacy or logo in 84% of all the labels reviewed. In addition, the smallest font sizes were used to display the medication name (an average of 8.9 points) and medication instructions (9.3 points). Color and boldface were used to highlight items most useful to the pharmacist as opposed to highlighting the information that is most useful to the consumer. Warning instructions were highly variable among all labels depending on the pharmacy.

7 A group of health literacy experts has pointed out, "Inadequate patient understanding of prescription dosing instructions and warnings is prevalent and a significant safety concern."[68] In a report published by the IOM, experts advocate for standardization of prescription medication labels in efforts to minimize patient confusion and improve patient safety. This report examines what is known about how medication-container labeling affects patient safety and discusses evidence-based approaches to address the identified problems. As precedents for such national standards, the report cites the successfully reformed nutrition facts food product label and standardization of over-the-counter labels by the FDA.

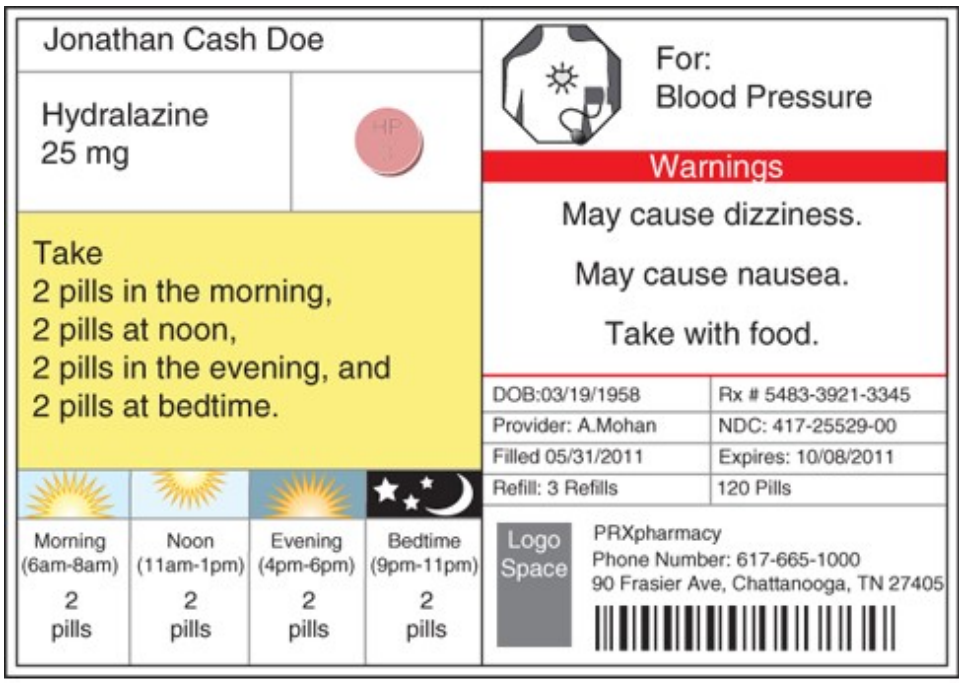
Based on the available evidence and expert recommendations, the USP released a new set of standards in 2012 for patient-centered medicine labels.[29] Enforcement will be at the discretion of each state, but it is expected that applying these standards will reduce adverse drug events and medication misuse. The standard provides a universal approach on how prescription labels should be organized in a "patient-centered" manner. For example, the label should include the indication for use and provide explicit instructions in the patient's preferred language. Medical jargon should be avoided. For instance, use *heart* instead of *cardiac* and use numeric instead of alphabetic characters (eg, *2*, not *two*). A list of USP standards is presented in **Table e1-4** with examples that incorporate them shown in **Fig. e1-3**.

TABLE e1-4 USP Prescription Container Label Standards to Promote Patient Understanding[29]

Standards	Description
Organize the prescription label in a patient-centered manner	Place label elements in an order and format that makes it easy for patients to find and understand
Emphasize instructions and other information important to patients	Format the label in a way to stress what is essential to the patient by: • Making prominent the information that patients must have in order to use medications correctly and safely (ie, patient name, drug name and strength, and directions) • Placing dosing instructions in the same order every time (ie, dose > route > frequency) • Making less prominent and placing away from dosing instructions less important information such as pharmacy name, prescriber, fill date, etc.

FIGURE e1-3

Examples of evidence-based medication labels incorporating recommendations from the ACP and United States Pharmacopeia Chapter 17.[70,71] Notice that the most important parts are in the left section, in larger font, and highlighted. Numbers are used instead of words; directions are explicit and on individual lines. These labels also include the indication for use in the upper right section, and a Universal Medication Schedule (UMS) graphic in the lower left. *(Data from references 69,70,71.)*



In addition to the USP standards, the ACP Foundation also recommends the use of a universal medication schedule (UMS) to convey and simplify dosage and/or use instructions; a visual aid with standard intervals (eg, morning, noon, evening, and night) can simplify dosing and reinforce text instructions (see bottom of Fig. e1-3).[68,69]

Counseling by Physicians and Pharmacists

Communication failure has been reported to be the underlying cause of about 10% of adverse drug events.[72] Patients with limited health literacy are significantly less likely to ask questions of their providers.[73] About one-half of the prescriptions taken each year are used improperly, and an estimated 96% of patients do not ask questions about their medications.[74]

Unfortunately, verbal counseling by prescribers and pharmacists has been disappointing. Though the exact prevalence of counseling behaviors is uncertain, one report indicated that patients received verbal counseling about 24% of the time from prescribers and only 14% of the time from pharmacists.[75] In addition, when physicians make an effort to communicate when prescribing new medications, they often fail to communicate critical elements of medication use. Tarn found that

physicians only communicate about three of the five expected elements of drug information (name of medication, purpose, dose and timing, duration, and adverse effects) when initiating new prescriptions.[76]

In efforts to improve these numbers and thus medication safety, Healthy People 2010 made verbal counseling by prescribers and pharmacists an objective. The goal is for 95% of patients to receive verbal counseling from prescribers and pharmacists on the appropriate use and potential risks of medications.[75]

Medication Names

Over the past decade, the FDA approved 293 new molecular entities, all of which needed brand and generic names.[77] Despite the intricate process of naming a drug and guidelines developed by the United States Adopted Names Council, drug mix-ups still occur in the dispensing process.[78] If these mix-ups occur with health professionals, imagine the confusion it causes to the consumer with limited health literacy. It can be overwhelming and dangerous.

A 2007 study assessed the relationship between health literacy and patient recall of their antihypertensive medications.[17] Overall, regardless of their literacy level, more than 40% of patients were unable to name any of their antihypertensive medications. When considering literacy levels, patients with limited health literacy fared worse in terms of recalling the names of their blood pressure-lowering medications (31.7% vs 59.5%). After adjusting for age and income, this difference was almost threefold (odds ratio, 2.9). In another survey of 100 patients, researchers found that participants could provide the names of only 55.8% of their medications.[79]

The United States Adopted Names Council follows a set of guiding principles when naming new medications. The very first guiding principle is "A nonproprietary name should be useful primarily to healthcare practitioners, especially physicians, pharmacists, nurses, educators, dentists, and veterinarians."[80] Notice that *consumers* or *patients* are not considered in this guiding principle, even though they are the very ones who need to know the name the most. We should "resolve to do better."[78]

METHODS FOR IDENTIFYING PATIENTS WITH LIMITED HEALTH LITERACY

Informal Assessments

The shame associated with limited literacy often prevents patients from receiving appropriate medical care, as they tend to hide their reading problem. In addition, healthcare providers often do not consider low health literacy in their patient care.[26,81] As previously mentioned, certain groups are at higher risk for limited health literacy, but even people with adequate literacy levels who are unfamiliar with the healthcare context may have difficulty navigating the healthcare system and often go undetected.

Common Signs

The following are common signs that may suggest a person has limited health literacy skills:[1,25,82]

1. Reads slowly
2. Has difficulty telling a coherent story
3. Fills out forms incorrectly or incompletely
4. Uses excuses such as, "I forgot my glasses," "I'll read this later," or "I don't have time to read this now. Can I take it home?"
5. Brings along a friend or family member for assistance
6. Fails to show up for appointments or is late for refills
7. Does not ask questions for clarification
8. Has difficulty following instructions
9. Nods in agreement or expresses understanding but does not truly understand information

Medication Review

A medication review may be very useful in identifying patients with limited health literacy skills. If the refill history is accessible, one might find that they often forget to refill their medications on time or never pick them up. They may not be able to verbalize a list of their medications despite having a short list. If the medication bottles are available, the patient can be asked to state the name, use, and dosing instructions for each of their medications. Patients with limited health literacy may not be able to respond accurately. They may say, "I take them just like it says on the bottle," or they have to look at the pill color and shape before they can respond.

If patients have a medication reconciliation list from their last visit, they may hand over the list to the health professional and say, "This is everything that I am taking." However, when probing a little further, they likely do not know the contents of that list, and it may not be exactly what they are taking. When asked to read a medication label that says, "Take one tablet by mouth once daily at bedtime," they may recognize the pill and say it reads, "Take one every day," because they have memorized the instructions that may or may not match the container label. When picking up refills, patients with limited health literacy may ask the pharmacist for the old bottles because they depend on their personal markings such as an *X* on the cap.[83]

Formal Measures

8 Because of the high prevalence of inadequate health literacy, many experts recommend that health professionals practice "universal precautions" by trying to communicate as clearly as possible

with *all* patients and family members.[84] Others suggest that professionals should screen patients' health literacy and then tailor communications accordingly. It is not clear which approach is best.

Clinical Controversy…

Should patients be tested for limited health literacy and then receive appropriately tailored health information? Although several instruments have been developed to screen and assess literacy levels, some advocate for the use of "universal precautions" so that *all* patients will receive clear communication in language that is plain and easy to understand.

A number of instruments have been developed to assess health literacy in both English and Spanish. These instruments can identify patients with "low," "marginal," "inadequate," or "below basic" skills, all of which mean that the patient has limited health literacy. An article by Mancuso provides a comprehensive review of health literacy assessment tools.[85]

Two of the most widely used measures of health literacy are the Rapid Estimate of Adult Literacy in Medicine (REALM)[86] and the Test Of Functional Health Literacy in Adults (TOFHLA).[87] These tests are mainly used in research, but they can be used in practice. Additionally, a survey revealed that patients do not mind having their literacy assessed in the clinical setting. More than 98% of patients agreed to a literacy assessment in a routine health visit, including 46% of patients with limited literacy skills.[88]

The REALM is a word-recognition test and estimates health literacy based on patients' ability to pronounce a list of medical terms. The TOFHLA consists of a reading comprehension section to measure prose literacy and a numeracy section. Passages with health information have words that have been deleted, and the patient is to choose the correct word from a list of four options. The Newest Vital Sign (NVS) assesses health literacy by having patients review a nutrition label and answer six questions about the label.[89]

While there are continued calls for comprehensive measures of health literacy, there is just as much interest in developing specialized versions as well as short versions of instruments for rapid assessment of literacy skills. Helitzer and others have developed a disease-specific web-based tool called TALKDOC which measures women's health literacy of Human Papilloma Virus and cervical cancer.[90] The Parental Health Literacy Activities Test (PHLAT) and its Spanish version have been developed to assess the literacy and numeracy skills, such as preparing infant formula correctly and dosing medication accurately, that parents need to safely care for infants and children.[91,92] In addition to shorter versions of the REALM (shortened-REALM)[93] and TOFHLA,[94] one-item measures have been developed and evaluated for rapid screening of health literacy skills which have subsequently been incorporated into a 4-item brief health literacy screening tool called BRIEF.[95,96,97,98,99]

As with all tests, each has its limitations. For example, S-TOFHLA does not assess numeracy unlike its parent test, TOFHLA. While the NVS was validated in people of all races with an average age of 41 years, a smaller study of African Americans with a mean age of 73.2 years determined that the NVS took 8 minutes longer to administer and was overall not as applicable in this age group.[100] Griffin et

al.[101] and Haun et al.[102] found significant variation in categorizing test-takers between inadequate and marginal health literacy in groups given both the REALM and S-TOFHLA assessments. Further, the BRIEF tool was validated in a predominately white male English-speaking veteran population which may not be generalizable to other populations.[95]

Table e1-5 provides a list of these commonly used assessment tools.

TABLE e1-5 Methods to Assess Health Literacy

One-Item Measures[96,97,98,99,103]	Length (minutes)	Interpretation/Scoring
"How confident are you filling out medical forms by yourself?" (0, extremely; 1, quite a bit; 2, somewhat; 3, a little bit; 4, not at all)	≤1	Positive answers for low health literacy are "somewhat," "a little bit," or "not at all"
"¿Qué tan seguro(a) se siente al llenar formas usted solo(a)?" (0, extremadamente; 1, mucho; 2, algo; 3, un poco; 4, para nada)		Positive answers for Spanish speakers are: "a little bit" or "not at all"
"How often do you have someone help you read hospital material?" (0, none of the time; 1, a little of the time; 2, some of the time; 3, most of the time; 4, all of the time)	≤1	Positive answers are "some of the time," "most of the time," and "all of the time"

Multi-item Measures

Assessment Tool	Description	No. of Items	Length (minutes)	Interpretation/Scoring
National Assessment of Adult Literacy (NAAL)[11]	Main purpose was to measure general literacy but included items specifically to assess health literacy	28	(Not for practice; survey done every 10 years)	Below basic Basic Intermediate Proficient
Shortened rapid estimate of adult literacy in medicine (Shortened-REALM)[93,a]	Word recognition list. Patients read a list of 66 common medical words and are scored on correct pronunciation	66	2-3	0-44 Low 45-60 Marginal 61-66 Adequate
Short test of functional health literacy in adults (S-TOFHLA)[94]	Patients must fill in words that have been deleted systematically from a sample text of common health instructions; words are selected from a list of	36	7	0-16 Inadequate 17-22 Marginal 23-36 Adequate

One-Item Measures[96,97,98,99,103]			Length (minutes)	Interpretation/Scoring
	multiple-choice options. Excludes numeracy testing			
Short Assessment of Health Literacy for Spanish Adults—50 (SAHLSA-50)[104,a]	Based on REALM and reading a list of common medical words in Spanish (includes two association words; key and distracter)	50	3-6	0-37 Inadequate
Newest Vital Sign (NVS)[89]	Patients review a nutrition label and answer 6 questions about the label	6	3	0-1 indicates >50% likelihood of marginal or inadequate literacy; 2-3 indicates possibility of limited literacy; and 4-6 adequate literacy
Short Assessment of Health Literacy—Spanish and English (SAHLS&E)[105,a]	Based on REALM and SAHLSA-50 (includes two association words; key and distracter). High correlation between words used in both versions and adequate to compare Spanish and English speakers together	18	2-3	0-14 Inadequate
Brief Health Literacy Screening Tool (BRIEF)[95]	Patients answer four questions and respond on a 5-point Likert scale	4	<2	4-12 Inadequate 13-16 Marginal 17-20 Adequate
Medical Term Recognition Test (METER)[106]	Self-administered medical word recognition test. Contains 40 medical words and 40 nonwords	80	2	0-20 Low 21-34 Marginal 35-40 Functional
Health Literacy Skills Instrument 10-item short form (HLSI-SF)[107]	Based on NAAL with four domains of health literacy skill assessment: reading/writing, numeracy, listening, and information seeking (Internet navigation)	10	5-10	<70% Below basic literacy 70-81% Basic literacy ≥82% Proficient literacy

[a]Except for the REALM, a Spanish version is available for all methods. SAHLSA-50 is available only in Spanish.

Data From references 11, 89, 93, 94, 95, 104,105,106,107.

STRATEGIES FOR CLEAR COMMUNICATION ON MEDICATION MANAGEMENT

Increase Health Literacy Awareness

The first step toward improving communication on medication management in individuals with limited health literacy is to recognize that limited health literacy is very common. A survey revealed that pharmacists in only 7% of community pharmacies attempt to identify literacy-related needs among the individuals they serve.[81] Most pharmacists seemed to be surprised and unaware that some of their customers may have difficulty reading. In fact, only 12% of American adults have proficient health literacy skills.

Therefore, it is very likely that most health professionals, including pharmacists, will be serving individuals with limited health literacy skills. As such, it has been recommended that professional schools incorporate health literacy into their curricula and areas of competence.[1] Much work remains to be done in this area but efforts are under way. This chapter itself is a tribute to these efforts.

Some disciplines are promoting health literacy awareness by incorporating the need to address this cross-cutting topic in their accreditation standards.[108] Some pharmacy schools are developing pharmaceutical care labs to introduce pharmacy students to the implications of limited health literacy on medication management.[109] Students complete assigned readings on misunderstanding prescription labels, watch a video on health literacy, and are asked to lower the reading grade level of a patient education document. Most students were able to lower the reading grade level of the document but were surprised at the amount of effort required. The authors concluded that this exercise helps the students understand the complexities of limited health literacy and affects their ability to communicate appropriately with patients—especially those with limited health literacy. In an introductory program, third-year pharmacy students determined the impact of using health literacy communication tools in a group of independent-living senior residents. They found that using these health literacy tools increases patient understanding, empowerment, and commitment to medication adherence.[110] Medical schools and residency programs have also explored different ways to incorporate this topic in their training. A 2-hour workshop was developed for physician residents to improve assessment of adherence and their medication counseling skills. One month after this intervention, physicians reported a significant improvement in these areas.[111]

Obtain a Complete Medication History

Perhaps one of the most essential components necessary to improve medication management in patients is obtaining a thorough and complete medication history. This is important for all patients regardless of their health literacy level. However, because patients with limited health literacy have difficulty naming their medications and are more likely to mismanage their medications, taking a complete, baseline history of what they are taking is especially valuable.

Medication histories are equally important in all clinical settings, including hospitals, communities,

home health, long-term institutions, and ambulatory centers. The importance of medication reconciliation (comparing a medication list to what a patient should be receiving) is also acknowledged by the hospital accreditation body, the Joint Commission.[112] This organization recognized that this is a crucial step in promoting medication safety and minimizing medication errors. Implementation of this requirement continues, and research is necessary to examine its effectiveness and implementation.

Table e1-6 provides a list of recommended strategies and questions for obtaining a complete and accurate medication history.[113,114,115] A video example of how this can be done in a manner sensitive to health literacy is also available at: *https://youtu.be/It8KfitBeeE*.

TABLE e1-6 Helpful Strategies and Questions for Obtaining a Complete Medication History

Preparation

- Before speaking to the patient, if available, obtain a list of their most current medications from their medical records or electronic health system
- This will help elicit information that the patient may have forgotten
- A quick review may also reveal patterns about their refill history

Determine person responsible for medicine regimen

- Do you take your medications on your own, or does someone else like a family member or friend help you take them?
- If patient has a caregiver helping with the medication regimen, include them in the interview

General questions

- Do you have your medication containers with you?
- If yes, the patient may use them to proceed and answer the following questions
- If not, ask if they have a list of the medications they take and proceed
- What are your medication allergies?
- How many different doctors write prescriptions for you?
- Which pharmacies do you use to fill your prescriptions? What is their contact information (phone number and address)?
- How do you pay for your medicines? What is the name of your insurance plan?
- What language do you prefer to have on your medicine containers?

Determine complete list of medicines

For each medicine that you take, please tell me the (1) name and dose, (2) the reason you take it (indication), and (3) exactly how you take it… How many times a day?

Do you take any medicines that you buy over-the-counter without a prescription such as Tylenol or Advil?

Do you take any herbal products, home remedies, vitamins, or other dietary supplements?

Do you take any medicines that you bring from another country such as Canada or Mexico?

Do you take any medicines that are bought over the Internet?

Do you get medicines from other places such as a dialysis unit or another clinic (eg, vitamin B12 shots)?

Do you use medicines that are not taken by mouth? For example, patches, inhalers, suppositories, creams, drops, liquids, injectables, nasal sprays?

Do you have medicines that you take only once a week or once a month?

Assess adherence

How do you remember to take your medicines on a regular basis so that you do not forget a dose (eg, pill box, leave pill bottle by toothbrush, set alarm, line up pill bottles)?

How many doses of your medicines have you missed in the last week?

On a scale of 0-10, how well do you remember to take your medicines every day or as prescribed? 0 means you forget to take them all the time, and 10 means you never miss a dose.

When did you take the last dose of each medicine?

If medication containers are available, look at the last refill date and determine if the patient is current on his or her refills. Look at the date it was filled, how many doses were dispensed, and how many are left now as a rough indicator of adherence.

The following articles are sources for the development of this table:

Sullivan C, Gleason KM, Rooney D, et al. Medication reconciliation in the acute care setting: Opportunity and challenge for nursing. J Nurs Care Qual 2005;20:95-98.

Kripalani S, Trobaugh AK, Coleman EA. Hospital discharge. In: Williams MV, Hayward R, eds. Comprehensive Hospital Medicine. Philadelphia: WB Saunders (Elsevier Inc); 2007:77-82.

Cua YM, Kripalani S. Medication use in the transition from hospital to home. Ann Acad Med Singapore 2008;37:136-41.

Conduct a Pharmacy Health Literacy Assessment

A pharmacy health literacy assessment measures how well the pharmacy is serving patients with limited health literacy skills.[116] It is an important first step to improve the quality of medication management for individuals with limited health literacy. The assessment tool developed with funding from AHRQ is comprehensive and is made up of three complementary parts: (a) an "assessment tour" completed by objective auditors (here, barriers for clear communication are noted as well as the physical environment of the pharmacy and staff interaction with patients), (b) a survey completed by staff (this helps determine how "friendly" the pharmacy environment is toward individuals with limited health literacy), and (c) focus groups with pharmacy patients (here, the intent is to collect detailed feedback from patients about their experience with pharmacy services). After all the data are collected and summarized, a tangible action plan should be developed for improved services to help individuals with limited health literacy.

Personalize Health Information

A study in hypertension knowledge demonstrated that personalizing health information to learning style preferences and literacy level improves patient understanding. Participants in the intervention group answered many more questions correctly than the control participants. The combination of assessing each person's health literacy as well as their learning preference provided a more powerful mechanism to enhance learning than either alone.[117]

Improve Medication Counseling Skills

Perhaps a key point to remember about this chapter is the vital importance of proper medication counseling. The National Conference of Pharmaceutical Organizations (NCPO) agreed that appropriate medication use should be a key goal of healthcare reform. In a policy statement of 2009 entitled, "From Reform to Revolution: Maximizing the Power of Proper Medication Use in Patient Care," the group emphasizes, "Policymakers must consider the importance of … appropriate counseling on the use of medications."[118] In a study to improve hospital discharge instructions, several interventions were implemented before the patients were sent home. The usefulness of each intervention was evaluated with a follow-up telephone call to 125 patients after discharge. The top three interventions that patients found most useful were (1) speaking with a pharmacist about their medications before discharge, (2) receiving an illustrated medication list, and (3) a follow-up telephone call after discharge. Patients with limited health literacy indicated the greatest benefit.[119]

The following ten points provide suggestions on how to improve medication-counseling skills. A video on how to improve the quality of discharge medication counseling is also available at: *https://youtu.be/BE-9CVVeZpA*.

1. *Take the time to counsel:* Despite the focus on increasing verbal counseling about medications by prescribers and pharmacists in Healthy People 2010 (objective 17-5),[75] progress has been limited. In fact, midterm review of the tracking data showed no change for prescribers and a 2% worsening by pharmacists.[120] Taking the time to provide verbal counseling about medications

is especially crucial in patients with limited health literacy.

2. *Create a relaxed and nonthreatening environment:* Many patients with low health literacy are embarrassed about the difficulty they have understanding health-related information. While they may not take the initiative to disclose this information, they are amenable to discussing health literacy and learning in the right environment. Thus, a first step toward effective medication counseling is to create a friendly and relaxed environment for the patient.[83] Take the time to listen and give the patient enough time to feel comfortable. Try to understand the patient's perspective.

3. *Use plain language:*[121] Speak clearly using plain and common words. Pay attention to the patient's own terms and use them back.[122] **Table e1-7** has examples of alternative lay terms to common medical terms. Avoid vague terms. For instance, oral and written instructions should be to "take medication 1 hour before breakfast," not "take medication on an empty stomach."

   Tell patients what you want them to do. Use instructions such as "Stop taking this medicine if you get pregnant" instead of "This medicine should not be taken during pregnancy." Another example is, "Do not drink alcohol with this medicine," which is preferred over, "Alcohol should not be mixed with this medicine." In addition, use identifiers such as the time of day. For example, say, "Take 1 tablet in the morning and 1 at bedtime," rather than, "Take twice daily."

4. *Show the patient each medication while counseling:* Open the medication containers so that the patient can see the colors and shapes of the tablets or capsules.[123] This will help them recall your instructions. For liquids, show patients or caregivers the correct dose with a marking on an oral syringe. This has been found to be the most accurate dosing method for liquids.[124]

5. *Focus on one to three key points and repeat them frequently:* Limit the number of messages and only tell patients what they *need* to know. Skip details that are "nice" to know.[121] Reinforce these same key messages by repeating them.

6. *Have patients repeat instructions:* An evidence-based strategy of verifying patient understanding is to use the "teach-back" method.[125,126] Patients are asked to repeat the instructions or information they were given to ensure that the key concept has been understood and remembered. If the concept is not repeated correctly by the patient, the health professional clarifies and tailors the explanation and reassesses patient recall. This cycle of explaining, assessing, and clarifying is repeated until the concept has been understood. It is termed "the interactive communication loop in clinician–patient education" by Schillinger and colleagues.[125] They found that when physicians applied this interactive communication strategy for their patients with diabetes, glycemic control improved.

   Findings of a study assessing patient understanding of prescription labels suggest that professionals should go further by asking patients to "demonstrate" or "show" how they will use medications. Davis and colleagues found that even though some patients could verbalize the correct instructions on the label (eg, take 2 tablets twice daily), they could not "demonstrate" the correct dose.[13] Of note, this group also included persons with adequate health literacy level.

7. *Encourage patients to ask questions:* Never ask, "Do you have any questions?" Instead, ask, "What questions do you have?"[122] Create an environment in which patients feel comfortable asking questions. The professional might say, "Sometimes I give people a lot of information about their medicines and it can be confusing … so I would like to ask you, what questions do you have?"

8. *Use pictures or illustrated medication schedules:* Research indicates that pictures help patients understand how to take their medicines,[127,128] and these may be particularly useful in patients with limited health literacy skills. A review of the literature found that pictorial aids improve recall, comprehension, and adherence.[128] Researchers have developed prototype illustrated medication schedules (**Fig. e1-4**),[129] as well as a guide on how to create simple versions using word-processing software.[130] These daily schedules provide the patient with a picture of the actual medicine, the name of the medicine, the indication, and specific dosing instructions. Assessment of such tools reveals that more than 80% of patients thought they were useful and easy to understand.[129] Other work confirms that these illustrated daily medication schedules improve medication self-efficacy and adherence among at-risk, community-dwelling older adults.[131]

9. *Supplement the interaction with patient-friendly educational material:* Written medication information can be helpful to supplement and reinforce specific counseling points if it is easy to read. Nonwritten material may also be useful in communicating medication information to patients. Alternative forms to written information include pictures/pictograms, videos,[132] audiotapes, modules on disks, and interactive Internet sites. Most of the health education available in these formats focuses on specific disease topics, and studies indicate that these modalities are increasingly effective.[133,134] However, some of these new media focus solely on medication information; research on their effectiveness is limited. **Table e1-8** provides some helpful resources for pharmacists and patients.

10. *Review complete regimen and consolidate all medicines into their daily schedule:* In addition to providing information about each individual medication to the patient, it is important to consider its use in the context of their full medication regimen. This is especially necessary when a regimen includes multiple medications each with specific requirements such as taking on an empty stomach or taking at bedtime. Patients may be easily confused with multiple requirements and either make their regimen more complicated than necessary or compromise their care by not taking their medications appropriately.

TABLE e1-7 Examples of Suggested Alternatives for Common Medical Terms[a]

Medical Term	Alternative
Angina	Chest pain
Fatigue	Tired
Adverse reaction	Side effect
Acid reflux	Heartburn

Medical Term	Alternative
Lipids	Cholesterol
Insomnia	Trouble sleeping
Subcutaneous	Under the skin
Nasal	Nose
Topical	On the skin
Administer	Give
Hypertension	High blood pressure
Contraception	Birth control

[a]Other examples of alternatives to medical terms are available in both English (*http://www.npsf.org/wp-content/uploads/2011/12/AskMe3_WordsToWatch_English1.pdf*) and Spanish (*http://www.npsf.org/wp-content/uploads/2011/12/AskMe3_WordsToWatch_Spanish1.pdf*) on the Ask Me 3 website of the National Patient Safety Foundation.

TABLE e1-8 Electronic Resources for Pharmacists and Their Patients

- **Websites**
  - For pharmacists
    - *http://tools.hospitalmedicine.org/resource_rooms/imp_guides/MARQUIS/marquis.html*
      - Includes taking the best possible medication history presentation, taking a good medication history video, best possible medication history pocket cards, good discharge counseling video, and ROI calculations
      - Requires user to sign up for free to access materials
    - HRSA health literacy section—free online course to improve communication with patients
      - *http://www.hrsa.gov/publichealth/healthliteracy/index.html*
    - MedlinePlus Drugs, Herbs, and Supplements
      - *https://www.nlm.nih.gov/medlineplus/druginformation.html*
      - Patient counseling information
      - Spanish translation available
    - National Council on Patient Information and Education
      - *http://www.talkaboutrx.org/index.jsp*

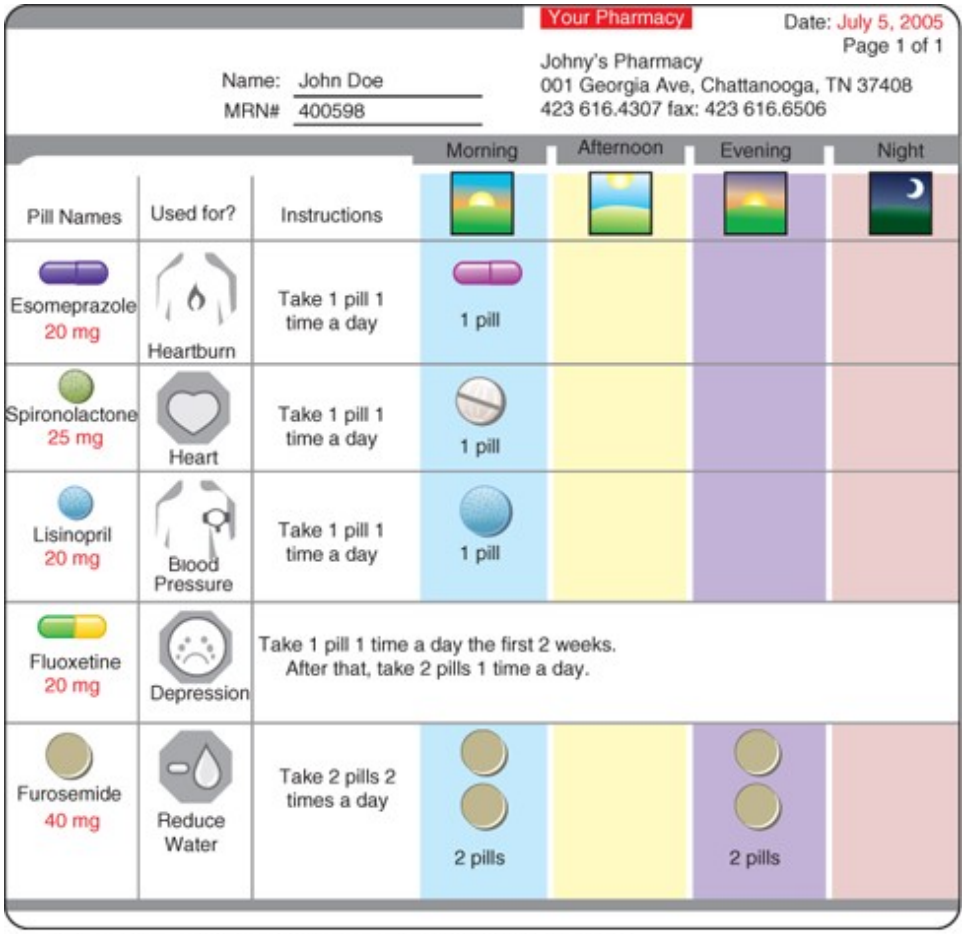
        - Comprehensive resource on safe medication use
    - Plain Language Medical Dictionary
        - *http://www.lib.umich.edu/plain-language-dictionary*
        - Translate medical terms to easier to understand terms
  - For patients
    - SafeMedication—*http://www.safemedication.com*
        - Helpful tabs:
            - "My medicine list"—also in Spanish
            - "Medication tips and tools"
                - Has section on "what you should know about…" (vaccines to prevent disease, using antibiotics wisely, etc.) and has section on "how to administer" (PDF flyers on how to administer eye drops, inhalers, etc.)
        - Can also perform a medication quick search—provides text information
    - MedlinePlus Health Topics
        - *https://www.nlm.nih.gov/medlineplus/healthtopics.html*
        - Education on over 975 diseases, illnesses, and health conditions in patient friendly language
        - Spanish translation available
    - FDA Consumer Drug Information
        - *http://www.fda.gov/cder/consumerinfo/default.htm*

- **Apps**
  - Medication reminders for patients in addition to those listed in Table e1-11
    - Mango Health—Medication Manager
        - *https://www.mangohealth.com*
    - Medisafe Medication Reminder, Prescription, and Pill Organizer
        - *http://www.medisafe.com*

        - Pill Reminder—All in One
            - iTunes App Store
        - And many more…
    - Audio Medication Patient Counseling
        - AudibleRX
            - *http://www.audiblerx.com*
            - Free 30-day trial; free for students
            - Can search by disease state or medication name
    - Translator
        - Google Translate
            - *translate.google.com*
            - iTunes App & Goggle Play stores
        - Medibabble
            - iTunes App Store
            - Contains thousands of translated questions and instructions (categories: history of present illness, past medical history, medications and allergies, etc.)

FIGURE e1-4

Personalized illustrated daily medication schedule. Visual tools such as this may help patients keep better track of all the medicines they take on a regular basis. *(For information on how to create such tools, visit: http://www.ahrq.gov/patients-consumers/diagnosis-treatment/treatments/pillcard/index.html#Acknowledgment.)*



Source: J.T. DiPiro, R.L. Talbert, G.C. Yee, G.R. Matzke, B.G. Wells, L.M. Posey: Pharmacotherapy: A Pathophysiologic Approach, 10th Edition, www.accesspharmacy.com

CREATE EASY-TO-READ HANDOUTS

Numerous studies have proven that most health education handouts are written at a higher grade level than what most adults can read.[1] Most health information is written at a 12th grade level or higher, but the average American reads at about the 8th grade level. Thus, it is important to keep in mind some general principles that are known to make handouts easy to read. They may be helpful either in creating material or as a checklist for determining the appropriateness of a handout.

Some of the principles are very similar to the ones used in verbal communication such as using plain language, focusing on one to three key messages, and incorporating suitable illustrations. However, the reader is referred to a more comprehensive reference created by the NIH to improve communication between the government and the public.[135] This plain-language initiative provides a number of useful tips on creating written handouts that are easy to read.

TECHNOLOGY

Technology is now more pervasive and easier to access in the United States than ever. With cellular phones, tablets, computers, and other devices such as “smart” thermostats, watches, and medical

sensors becoming smaller, faster, and cheaper, their use and adoption has also increased. Having a computer in the home has risen from 8.2% in 1984 to 83.8% in 2013. Likewise, internet use at home has also risen from 18% in 1997 to 74.4% in 2013.[136]

Despite these advances, there are still stark disparities in technology use and internet access among different incomes, education levels, age groups, geography, and ethnicities (**Table e1-9**).

TABLE e1-9 Computer and Internet Use for Households: 2013[136]

Household Characteristics	% Households WITH computer	% Households WITH some Internet Access
Age of householder		
14-34 years	92.1	77.7
35-44 years	92.5	82.5
45-64 years	86.8	78.7
65 years and older	65.1	58.3
Race and Hispanic origin of householder		
White alone, non-Hispanic	85.4	77.4
Black alone, non-Hispanic	75.8	61.3
Asian alone, non-Hispanic	92.5	86.6
Hispanic (of any race)	79.7	66.7
Limited English-speaking household		
No	84.7	75.5
Yes	63.9	51.4
Metropolitan status		
Metropolitan area	85.1	76.1
Nonmetropolitan area	76.5	64.8
Household income		
< $25,000	62.4	48.4
$25,000-$49,999	81.1	69.0
$50,000-99,999	92.6	84.9

Household Characteristics	% Households WITH computer	% Households WITH some Internet Access
$100,000-$149,000	97.1	92.7
$150,000 and more	98.1	94.9
Educational attainment of householder		
Less than high school graduate	56.0	43.8
High school graduate (includes equivalency)	73.9	62.9
Some college or associate's degree	89.0	79.2
Bachelor's degree or higher	95.5	90.1

Adapted from: File T, Ryan C. Computer and Internet Use in the United States: 2013. American Community Survey Reports, ACS-28. Washington, DC: U.S. Census Bureau, 2014. http://www.census.gov/library/publications/2014/acs/acs-28.html.

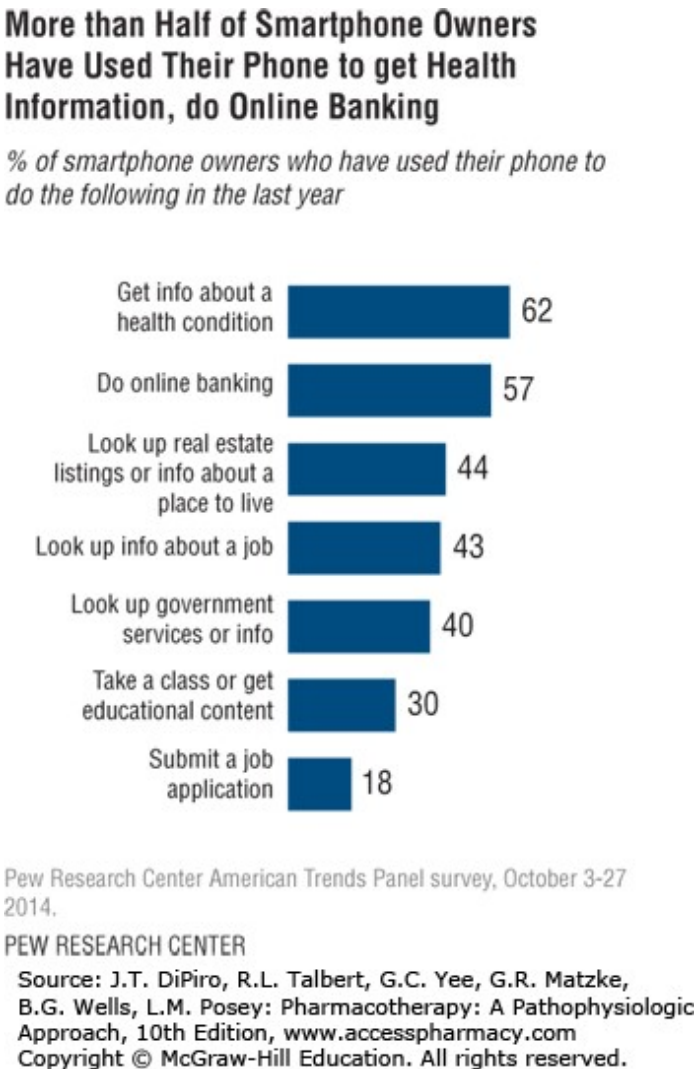
A 2013 US Census Bureau report showed that the majority of households with a computer were English speaking, younger, had a higher income, more education and lived anywhere in the United States. A similar pattern can be seen with regards to internet access. Only 58% of the older population had internet access. Households that were black or Hispanic (61.3%, 66.7%) tended to have less internet access compared with whites and Asians (77.4%, 86.6%). Households with internet access also tended to be English speakers, have a higher income, more education, and live in metropolitan areas. The same report revealed that compared to having a computer at home, households that were most likely to have only handheld devices were low-income (7%), black or Hispanic (9.1% each), or younger (9.5%).[136]

A Pew Research Center survey in 2015 showed that 92% of Americans have a cell phone (68% smartphones, 34% traditional cell phones). An important finding was 7% were classified as "smartphone-dependent" users, meaning that they have a smartphone, but do not have internet at home other than their mobile data plan, nor do they have other device options for accessing the internet such as a computer or laptop. These users tended to be low-income, black, or Hispanic. In terms of how smartphones were used, 97% use their smartphone for text messaging, 92% for phone calls, 89% for internet, and 88% for email. Young users (age 18-29) also use their smartphones heavily for social networking services (91%) compared with other age groups. **Figure e1-5** shows that 62% of respondents have used their smartphone to look up information about a health condition.[137]

FIGURE e1-5

More than one-half of smartphone owners have used their phone to get health information, do online banking. (*Used with permission from "U.S. Smartphone Use in 2015." Pew Research Center,*

Washington, D.C. (April 1, 2015). http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015.)



Technology and Health Literacy

As healthcare continues to shift to more electronic resources and connectivity, the most vulnerable populations may incidentally be left behind. While more than 90% of the US population has cell phones, there is a significant difference in how they are being used when comparing persons with marginal or low health literacy to those with adequate health literacy. Those with adequate health literacy were more likely to own a smartphone, text message, and access the Internet for email, web browsing, and health information. They were also more likely to contact their healthcare provider through these means compared to those with marginal or low health literacy.[138]

Though more than 50% of those with low health literacy were able to text message, less than half reported that they performed any of the other tasks including email. This was significantly less compared with at least 75% of those with marginal health literacy reporting they regularly perform all of those tasks on their phones.[138] Additionally, those with low health literacy were more likely to use social networking sites and phone apps than search engines to obtain health information, and also preferred text messaging and radio to receive this information.[139] *Thus, it appears that text messaging*

and social networking sites may be the best way to electronically reach those with low health literacy; however, these disparities should be a reminder that a digital divide exists especially with those with low literacy skills.

Unfortunately, when it comes to internet use for health access services, such as patient portals, patients with low health literacy were 70% less likely to sign on or complete their access despite having internet access.[140] Among the 59% of US elderly who use the Internet, an even smaller percentage of those with low health literacy (9.7%) used it for health information purposes compared with those with adequate health literacy (31.9%).[141] As more technology is incorporated into our healthcare system, our most vulnerable populations will need our close attention to minimize the already growing health disparities.

Technology and Medication Adherence

Table e1-3 shows that the current evidence for the association between health literacy and medication adherence is inconclusive. However, nationwide, an estimated 75% of Americans have trouble taking their medicine as directed; approximately 125,000 annual deaths are due to nonadherence. Indeed, poor adherence is a major public health challenge, and it makes sense that persons with low health literacy may have even a bigger challenge.

Current technology trends have helped to address primary nonadherence, which is not filling or picking up a prescription, by increasing the use of electronic health records (EHRs) to electronically transmit prescriptions or "e-Prescribe" medications directly to the pharmacy. This eliminates the need for patients to carry a paper prescription to the pharmacy. This solution has also allowed for prescription insurance formularies to be available to the prescriber at the point of entry to help reduce patient costs and waiting time by selecting drugs that are cheaper or do not require prior authorizations, both of which are barriers to obtaining medication. Prescription insurance plans and pharmacies have also begun to share patient claims information, refill history data, and missed refill alerts with connected providers to help reduce duplication, coordinate care, reconcile medications among other prescribers, and increase patient safety.[142]

While primary nonadherence and discontinuation of medications are being addressed on a national level, compromised execution or the inconsistent use of medication by the individual patient has been a bigger challenge. In efforts to improve medication adherence, different technologies are emerging to help with this issue. **Table e1-10** provides examples of technologies available to help with medication adherence. Two literature reviews provide evidence that text messaging improves medication adherence rates, at least in the first 6 months, but conclude that larger and longer studies need to be conducted.[143,144] Electronic medication dispensing devices, such as MedicaSafe, are available to not only help remind patients to take their medication but also allow prescribers to monitor progress.[145] This may have importance with medications that are costly such as recently marketed hepatitis C treatments or when adherence is extremely important such as with tuberculosis treatment or post-transplant immunosuppression.

TABLE e1-10 Examples of electronic technologies to improve medication adherence

	Examples	Comments
Electronic Reminders	• Alarm clock • Email reminder • Cell phone calendar • Text messaging • Dose-Alert Pill reminder	• Inexpensive • Easily accessible • Sound alerts
Smart Pills **Smart Bottles** **Smart Caps**	• Proteus Discover system • AdhereTech • GlowCap • SMARxT Med Reminder • e-pill Multi-Alarm TimeCap	• Costly • May require internet/cellular connectivity • Sound & light alerts • Notification and tracking systems • Caution with cap switching
Electronic Medication Dispensers	• MedicaSafe • Philips Medication Dispensing Service • Med-E-Lert Automatic Pill Dispenser	• Moderately expensive • Controlled access capability • Notification and tracking systems • Need to replenish monthly

Mobile Technology	• Cell phone apps:
	  ○ Pharmacy
	  ○ Insurance plan
	  ○ Medication adherence
		• Free or very inexpensive
		• Easy to difficult usability
		• Pictures & visual reminders
		• May require internet connection
		• Gamification and rewards
		• May be limited by operating system

Lastly, as mobile technology has become widely available, so have applications (apps) that can be used on smartphone devices. The results of using apps to improve medication adherence have been mixed, but there is some trend to overall improvement in self-care behavior and attitudes.[146] One randomized controlled study has shown that an app can improve medication adherence in the elderly who tend to use less modern technology.[147] Dayer et al. reviewed more than 160 apps available in 2012 and ranked them based on a number of attributes (**Table e1-11**).[148] Many other apps are available that connect patients directly to their pharmacy and are designed to provide refill reminders as well as easily request refills. Although more studies are needed to evaluate the effect of technology-based adherence interventions, current trials suggest combinations of in-person communication WITH automated reminders or triggers are more effective.[149]

TABLE e1-11 Top 10 Rated Medication Adherence Apps and Operating System[148]

Application Name	iPhone	Android
1. MyMedSchedule	**X**	**X**
2. MyMeds	**X**	**X**
3. MedSimple	**X**	**X**
4. Med Agenda	X	
5. RxmindMe Prescription	X	
6. Dosecast	**X**	**X**
7. TRxC (Beta)	X	X
8. MediMemory	X	
9. PillManager	**X**	**X**
10. MedsIQ Individual/Multi-user		X

Systems available in 2016 are shown in bold.

CONCLUSION

Limited health literacy is a prevalent problem that has often been overlooked. However, it is now considered a priority area by the federal government and a number of national organizations. Research is under way to better understand its effect on health and to develop effective interventions. The role of health literacy on medication use is still being evaluated, but there is no question that it is a significant one. Health professionals need to consider that many of their patients may have limited literacy skills. In particular, health literacy is an important concept to consider in efforts to improve appropriate medication use.

ABBREVIATIONS

Favorite Table | Download (.pdf) | Print

ACP	American College of Physicians
AHIP	America's Health Insurance Plans

AHRQ	Agency for Healthcare Research and Quality
CDC	Centers for Disease Control and Prevention
EHR	Electronic Health Record
FDA	Food and Drug Administration
HHS	Health and Human Services
HIV	human immunodeficiency virus
IOM	Institute of Medicine
LEP	limited English proficiency
MDI	metered-dose inhaler
NAAL	National Assessment of Adult Literacy
NCPO	The National Conference of Pharmaceutical Organizations
NIH	National Institutes of Health
NVS	Newest Vital Sign
PHLAT	Parental Health Literacy Activities Test
REALM	rapid estimate of adult literacy in medicine
TOFHLA	test of functional health literacy in adults
WRAT-3	Wide Range Achievement Test
UMS	universal medication schedule
USP	United States Pharmacopeia
VHA	Veterans Health Administration

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Chapter e2: Cultural Competency

FIGURE e2-1

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CULTURE, COMMUNITY, AND SOCIAL DETERMINANTS OF HEALTH

KEY CONCEPTS

- 1 Healthcare providers should strive toward cultural competency to improve care and access unique resources for patients and communities from diverse cultures and backgrounds.
- 2 Changes in demographics in the United States, health disparities, and patient safety are among the reasons that cultural competency should be emphasized in healthcare.
- 3 A variety of models recognize cultural competency as a process, not an achievement.
- 4 Legal and regulatory issues surrounding cultural competency include understanding and interpreting accreditation standards for healthcare organizations and Title VI of the Civil Rights Act.
- 5 Patients may enter the healthcare setting with a different explanation of their illnesses than found in the Western biomedical model (WBM).
- 6 Cultural values and beliefs influence decisions and attitudes about healthcare, including race, ethnicity, age, gender, sexual orientation, and religious beliefs.
- 7 Developing communication skills to interact with diverse population involves recognizing personal styles and cultural values of communication as well as barriers to patient understanding.
- 8 Linguistic competency encompasses understanding the capacity of organizations and providers to communicate well with diverse populations such as patients with limited English proficiency (LEP), low literacy, or hearing impairments.
- 9 Before practitioners can understand other cultures, they should understand personal and organizational values and beliefs.
- 10 Skills for working with patients from diverse cultures include being able to listen to the patient's perception of health, acknowledging differences, being respectful, and negotiating treatment options.

Culture defines us.[1] Although our genetic makeup, which is largely nonmodifiable and affects our physical state of being, **social determinants of health** are also of great influence. Determinants of health describe the factors that affect the health of individuals. At the core of each person are their inherited traits as well as the choices that they make about their lifestyles (eg, diet, exercise, leisure activities). Their health is further marked by their exposure to healthy or risky behaviors based on the places where they live, work, worship, or go during the day and their built environment (eg, sidewalks, exposure to clean air, policies for healthy choices).[2] Basically, our socioeconomic status, race and ethnicity, gender, age, and communities (environments), as part of our cultures, shape us.[3]

Consider the following brief descriptions of three individuals and the determinants of health that influence them. Patient 1 is a 42-year-old bilingual Vietnamese American, Buddhist woman living on the West Coast whose family immigrated to the United States 35 years ago. Her lifestyle choices include a vegetarian diet, gardening, and daily meditation. She lives in a suburban community with her husband and three children, drives a hybrid electric/gas car to her work as a school teacher, and purchases food from a local farmer's market. She has health insurance and her city public policy includes no indoor smoking in public places and state policies include special low-emission requirements on vehicles. Weekend activities with the family include sports and dance for the kids along with others from the community center that serves a number of Asian-American families.

Patient 2 is a 27-year-old single African American, Muslim upper-middle-class man living in a major city in the Eastern Coast of the United States. Having just finished his graduate school degree, he lives in a high-rise apartment and walks or rides the subway to his work at a major corporation. In his leisure time, he enjoys reading and going to major sporting events with his college friends who come from diverse backgrounds. During the week, he also frequents the local mosque and community events that are supported by his neighborhood.

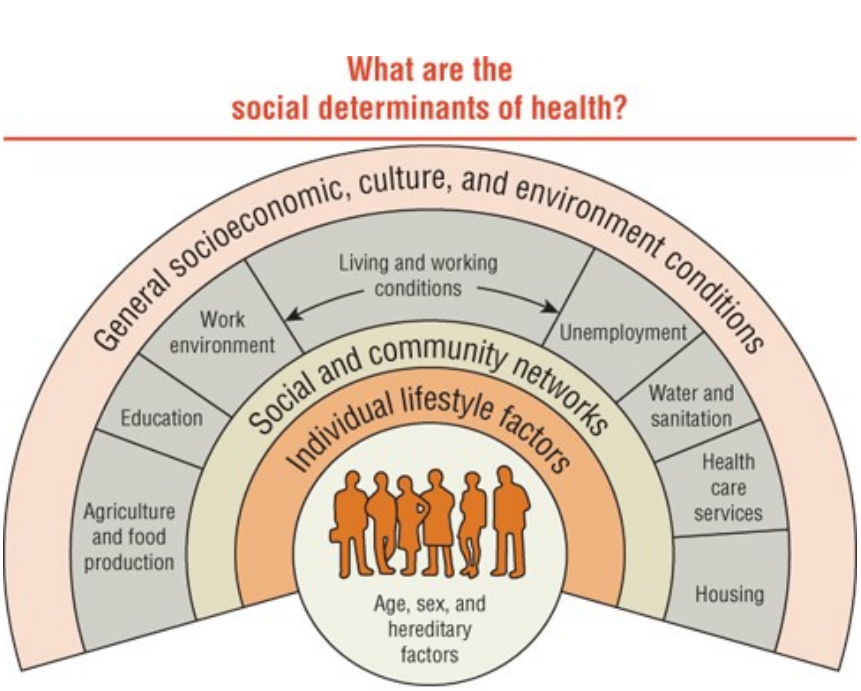
Patient 3 is a 55-year-old European American, Protestant middle class man living in the Midwest. His family moved from the rural South 2 years ago for a new full-time job. Due to recent economic changes in the community, he now has to work three part-time jobs (two in food industry and one in construction) so that he can help support his wife who is undergoing breast cancer treatment. As a result of his high work demands, he is not able to shop for groceries or exercise and so the couple often eats away from the home or they prepare quick and processed meals at home. He notices that he has gained about 10 pounds (4.5 kg) in the past 6 months and has difficulty sleeping. The family also has not had time to connect with their church or other friends due to his work and doctor appointments for his wife.

Can healthcare professionals assume that these three patients have the same healthcare beliefs, values, and approach to healthcare? While each of the patients described above will have a unique health situation, social determinants will influence their exposure to healthy conditions and their cultural backgrounds will also shape their health beliefs and behaviors.[4]

What is culture? **Culture** can be defined as "the learned and shared beliefs, feelings, and knowledge that individuals and/or groups use to guide their behavior and define their reality as they interact with the world."[5,6,7] However, to interact more effectively with individuals from different cultural backgrounds, providers should develop cultural and linguistic competencies.

FIGURE e2-1

Social Determinants of Health.



Source: J.T. DiPiro, R.L. Talbert, G.C. Yee, G.R. Matzke, B.G. Wells, L.M. Posey: Pharmacotherapy: A Pathophysiologic Approach, 10th Edition, www.accesspharmacy.com

Cultural competency may be described as the attitudes, knowledge, skills, and values that an individual has and uses in working effectively in a cross-cultural environment.[8,9] At an organizational level, cultural competency can be demonstrated by an organization having a defined set of values and principles (mission), policies, and structures for service delivery that incorporate community input and enable individuals in the organization to work effectively within cultures and cross-culturally.[8,10]

Linguistic competency is linked to cultural competency. It describes the "capacity of an organization and its personnel to communicate effectively and convey information in a manner that is easily understood by diverse audiences" (eg, persons of limited English proficiency [LEP], those who have low literacy skills, individuals with different hearing or sight abilities).[10]

The environments we live in—our communities—also define our health.[3,4,11] Research suggests that while we should address health at the individual level, providers and policymakers must also understand and address healthcare at the community and population level.[12,13] But what creates a community? **Communities** may be defined as organized groups of people with a shared identity that *may exist around* racial and ethnic groups, socioeconomic position, religion, age, gender, language, as well as other cultural ties.[14] Communities can also cut across these variables. **Community competency** encompasses cultural competency; however, it also recognizes the unique role of communities as a type of culture.[14] Within a community competency framework, clinicians will understand that at the core of a community are history, context, geography, and culture.[14] For example, given similar socioeconomic and educational backgrounds, an adolescent male raised in Chicago, Illinois, whose family is from Puerto Rico would have a different life experience (ie, a different community or environmental influence) than an adolescent male of a similar family background being raised in Greenville, South Carolina.

History helps describe the collective consciousness of a community. For example, a community's recent history may include the devastation of a flood or tornado. Political history can affect a refugee population's experience and the history of slavery in the United States affects multiple communities. The history of a community is not always considered in social determinants of health models, but understanding the history can enhance evaluating the social determinants of health. Context acknowledges the present situation of a community such as the quality of education, housing, or healthcare. Geography helps to distinguish differences between a male of Islamic

religion and Somali descent who is raised in Philadelphia, Pennsylvania, from one who is raised in St. Paul, Minnesota.

What is the difference between cultural and community competency? Cultural competency helps clinicians understand the individual; thus, "culturally competent care can be considered patient-centered care."[14,15] Community competency provides a broader context for clinicians to work with individuals and families, as it incorporates the influence of the population and environment on the individual. Although this chapter focuses on cultural competency and care of individuals, acknowledging the influence of community on individuals is significant.

1 Healthcare providers should strive toward cultural competency in the context of social determinants of health and community history to improve care and access unique resources for patients and communities from diverse cultures and backgrounds. This skill is increasingly important to healthcare practice as our society becomes more and more diverse. The healthcare provider tries to negotiate an approach to treatment that is respectful of patient beliefs, while integrating an effective course of therapy in a manner consistent with the patient's beliefs and understanding. This approach does not devalue the patient's cultural and community beliefs. As a result, better treatment adherence can occur.[16,17] The negotiation between provider and patient is the art of patient care and is a skill that requires continual practice.

A culturally competent approach to care incorporates—at all levels—the importance of culture, the assessment of cross-cultural relations, vigilance toward the dynamics that result from cultural differences, the expansion of cultural knowledge, and the adaptation of services to culturally unique needs of the patient.[8,16,17,18] In short, there is respectful acknowledgment of the patient's belief system. A culturally competent approach to care includes a set of behaviors and attitudes that enable a healthcare provider to work effectively in cross-cultural situations with humility, sensitivity, and cultural awareness.

Reasons for Cultural Competency

2 Changes in demographics, health disparities, patient safety, and healthcare workforce shortages are among the reasons for needing cultural and linguistic competency in healthcare.[16,17] In this section, the situation as it exists in the United States is detailed. The central concepts would be similar for other countries around the world, even though some of the specifics would vary.

The United States is diverse.[19] Approximately 40% of the population identifies as African American, Hispanic, Asian, American Indian, being of another race that is not white, or as coming from two or more races.[19] The United States is aging, with 14.5% of the population reported as being 65 years of age or older.[19] Furthermore, people have diverse religions, languages, and countries of origin. Nearly 84% of adults in the United States report identifying with a particular faith or religious group.[20] More than 300 distinct languages are spoken in American homes.[21] The three patients described in the beginning of the chapter highlight some of the diversity that might be encountered throughout our United States.

Regrettably, health disparities generally occur in populations who have systematically experienced a social, economic, or environmental disadvantage in society. While disparities are often linked to differences in race and cultural backgrounds, they also exist among groups based on religion, physical disability, sexual orientation, and age, among other characteristics. **Health disparities** refer to gaps in the quality of health and healthcare and can include differences in rates of disease or illness, access to healthcare, or general health outcomes.[22] One of the overarching goals of Healthy People 2020 (**Table e2-1**), which frames the national health agenda, is to eliminate health disparities that exist in our population and achieve health equity.[23]

TABLE e2-1 Overarching Goals of Healthy People 2020

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death
- Achieve health equity, eliminate disparities, and improve the health of all groups
- Create social and physical environments that promote good health for all
- Promote quality of life, healthy development, and healthy behaviors across all life stages

Source: U.S. Department of Health and Human Services, Sept 25, 2015.[23]

Health disparities may vary based on the population and the health outcome measured. For example, adults in the United States who are African American experience higher mortality rates of heart disease compared to non-Hispanic whites.[24] Diabetes prevalence rates are greater among adults with lower household incomes, Hispanics, and African Americans than among Asians and non-Hispanic whites. Suicide rates are higher among men than women, with elevated rates found in American Indian/Alaska Native as well as Lesbian, Gay, Bisexual, and Transgender (LGBT) populations.[25] Smoking prevalence is higher among adults who have not graduated from high school when compared with adults with a college degree. These statistics and others like them underscore the need for improvements in the quality of healthcare for minorities.

A healthcare provider's cultural competency can help to address health disparities in their communities and empower patients from minority groups to improve their health.[26,27] By understanding the needs of underserved patients and by identifying the unique resources available within these populations, the healthcare provider can positively impact patient's healthcare experience. For example, a healthcare provider who understands the importance of community support in a Latino patient seeking healthcare can include a key community member (eg, a promotora or lay health worker) as an active member during treatment and posttreatment care.[28,29] By working within the patient's cultural needs and expectations, the provider can use otherwise overlooked support systems (eg, family, neighborhood friends, and religious ties) in a community with fewer or overtaxed resources. Using cultural competency skills to better identify cultural and community assets in minority and underserved populations allows the provider to go beyond basic awareness of and sensitivity to cultural differences to increase a patient's adherence with treatment and positively impact patient health outcomes.[30] Additionally, the provider's ability to empower patients through cultural competency will facilitate the development of trusting patient/community/provider relationships.[31]

Culture and language may also play a role in patient safety.[32] Errors and adverse events can occur because of differences in language between healthcare providers and patients, ineffective use of an interpreter, or inadequate translation of written material related to health. Poor judgment or lack of adherence to a treatment plan can occur because of discordance in a patient's cultural health belief system. Cultural "incongruences" among patients and providers may lead to making judgments about a patient's decision to use complementary and alternative medicine (CAM) or casting stereotypes based on personal biases about healthcare.[15]

While some areas of the country may have a surplus of providers, there are still shortages in healthcare providers across disciplines as well as lack of diversity among providers, which contributes to health disparities.[33] More than 54 million Americans live in areas that are designated by the Health Resources and Services Administration (HRSA) as primary care health professional shortage areas.[34]

To meet the healthcare needs of a multicultural society, there is a compelling need to equip current and new providers with the skills to provide a culturally competent approach to care. The education and recruitment of a

culturally diverse workforce can lead to greater provider-patient concordance (ie, ability for a patient to consult with a provider of similar cultural or linguistic background).[34,35]

Given the dynamic shifts in demographics in the United States and contrasts in health equity across cultures, healthcare providers cannot ignore the effects of culture on healthcare. If the healthcare system does not acknowledge and address cultural influences in patient care, patient safety can be compromised. Opportunities exist for educating providers and recruiting a more diverse workforce to care for society.

CULTURAL COMPETENCY MODELS

3 Several models are often used in healthcare to describe and understand cultural competency: the Cultural Competence Continuum by Terry Cross, the Purnell Model for Cultural Competence by Larry Purnell, and the Process of Cultural Competence in Delivery of Healthcare Services by Josepha Campinha-Bacote.[36,37,38] Across these models, a salient theme surfaces—cultural competency is a process rather than an achievement.[10,36,37,38]

In the Cross Cultural Competence Continuum, six stages are described in a stepladder model starting with cultural destructiveness and ascending toward cultural proficiency.[37] *Cultural destructiveness* in healthcare occurs when a person or an organization actively devalues or berates patients or a community based on their cultural background (eg, race, language, and religion). When persons or organizations are willing but unable to support culturally oriented practices, they demonstrate *cultural incapacity*. *Cultural blindness* results from an effort to treat every patient or family the same regardless of culture. However, the provider or organization can miss key elements in the patient's healthcare behavior that are attributable to their culture. Treating patients equally does not necessarily signify that patients should be treated the same. In *cultural precompetency*, individuals and organizational leaders recognize that culture is influential in healthcare and efforts are made to improve and adapt care related to culture. In this stage, providers and organizations often believe that making a few adjustments or changes in practice or policy to improve care to diverse cultures are sufficient. However, they do not embark on a continuous improvement plan.

Although cultural competency can really never be achieved, individuals and organizations demonstrating traits of *cultural competency* will value diversity and seek to continuously implement and evaluate new ideas and programs to improve their care to patients and families from different cultures. Those providers and organizations considered to be more *culturally proficient* will be viewed as leaders at the forefront of cultural competency who are actively educating others or conducting research in the field.

In the Campinha-Bacote model, five constructs with an interdependent relationship describe the providers developing process of cultural competence: cultural awareness, cultural knowledge, cultural skill, cultural encounters, and cultural desire.[38] By self-assessment of cultural and professional biases and beliefs, clinicians develop increased *cultural awareness*. This self-awareness helps clinicians to recognize the risk of imposing personal beliefs in patient care. As clinicians learn more about beliefs and practice, disease epidemiology, and the efficacy and acceptance of therapies that are found in diverse cultures, they expand their *cultural knowledge*. Providers acquire *cultural skills* as they learn how to collect subjective information and social histories as well as conduct physical assessments that are relevant to different cultures. The increased opportunity for *cultural encounters* through directly interacting with individuals and families from diverse groups helps providers to have practical experience with cultural norms and variations as well as language needs. At the intersection of awareness, knowledge, skills, and encounters is cultural desire. When providers want to learn and grow in the process of cultural competency and do not feel obligated to care for diverse cultures, then they expand their *cultural desire*. Cutting across all of these constructs is a sense of *cultural humility* in which providers recognize the continuous process of learning.

The Purnell model explores the relationship of family, community, and the global society as they influence the individual person.[36] The model further outlines 12 different cultural beliefs and traits that may affect the individual and are often interconnected, such as healthcare practices, spirituality, communication styles, and workforce issues. In this model, Purnell illustrates that healthcare providers and organizational leaders often experience a learning process related to their cultural consciousness. In this continuum, providers may move from being unconsciously incompetent (not aware of lack of competence), consciously incompetent (aware of lack of competence), consciously competent (aware of improving competence) toward unconscious competence. When a provider is unconsciously competent, they have been able to integrate skills, knowledge, and awareness of the varying cultural, familial, and broader community influences on a patient with fluency.

As clinicians use these models and work with new cultures and in new environments, they may feel that they regress and are not as competent. However, if organizations and clinicians recognize that they are on a path of continuous improvement and approach the care of patients and communities with an attitude of humility and sensitivity to potential opportunities and barriers in care, they will be taking great strides toward providing a positive healthcare environment for their patients and the communities they serve.

LEGAL, REGULATORY, AND ACCREDITATION REQUIREMENTS

4 Legal and regulatory issues surrounding cultural competency include understanding and interpreting Title VI of the Civil Rights Act and accreditation standards for healthcare organizations. Title VI "prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance."[39,40] In 2000, under Executive Order 13166 of Title VI, federal agencies became required to evaluate and develop services for persons with LEP and meaningful access to these services.[40,41]

The 2013 enhanced National CLAS Standards (Culturally and Linguistically Appropriate Services) provide a framework for health and healthcare organizations to promote health equity and quality for diverse populations.[42] The Standards open with an overarching principle to "Provide Effective, Equitable, Understandable, and Respectful Quality Care and Services." Fourteen standards grouped in three themes follow, including: (a) Governance, Leadership and Workforce (Standards 2-4), (b) Communication and Language Assistance (Standards 5-8), and (c) Engagement, Continuous Improvement, and Accountability (Standards 9-15). State and national policies have provided particular emphasis on access to language services including interpreters (**Table e2-2**).[41] Challenges persist to appropriately use, certify, and reimburse professional interpreters with a growing number of states also requiring cultural competency training for health professionals.

TABLE e2-2 Communication and Language Assistance Standards for Culturally and Linguistically Appropriate Services (CLAS) in Health and Healthcare[42]

Standard 5: Offer language assistance to individuals who have limited English proficiency and/or other communication needs, at no cost to them, to facilitate timely access to all health care and services.

Standard 6: Inform all individuals of the availability of language assistance services clearly and in their preferred language, verbally and in writing.

Standard 7: Ensure the competence of individuals providing language assistance, recognizing that the use of untrained individuals and/or minors as interpreters should be avoided.

Standard 8: Provide easy-to-understand print and multimedia materials and signage in the languages commonly used by the populations in the service area.

The Joint Commission, the primary national accrediting body for healthcare organizations and programs, supports CLAS standards through requirements for effective communication, cultural competence, and patient-oriented care.[43] This roadmap highlights the importance of integrating culturally competent care across the

organizational and professional structure from admission to dismissal.

Recognizing that improved patient safety occurs when providing appropriate language services and obtaining informed consent with well-translated and easily understandable forms, The Joint Commission has recommendations based on cultural and linguistic competency.[32,43] Considerations include collecting patient-level demographic data to report outcomes to better understand patterns in health disparities. HRSA has also developed indicators of cultural competence in healthcare organizations. The incorporation of cultural competency into Joint Commission and HRSA guidelines gives organizations and healthcare leaders further rationale to move toward more culturally competent care.

The Joint Commission emphasizes leadership involvement and ongoing staff education related to cultural competency. Further, five states in the United States have passed legislation requiring healthcare professionals to complete training in cultural competency or multiculturalism with additional states exploring similar legislation.[42,44]

The healthcare system must work to engage patients and their communities.[3] There are definite trends from stakeholders in managed care, government, and academe to incorporate cultural competence for the purpose of improving quality of care and in some cases as a business imperative.[45] Independent of the legal and regulatory requirements, the ultimate goal of a healthcare provider is to improve patient outcomes including understanding the culture and language of patients.

PATIENT EXPLANATORY MODEL

5 How do patients experience and understand their own health? According to medical sociologists, patients may enter the healthcare setting with a different explanation of their illness than the explanation found in the **Western biomedical model (WBM)**. This model proposes that there is a pathophysiologic or etiologic reason for disease. In many cultures, the source and meaning of illness may be attributed to a variety of other causes such as spiritual or religious influences or to retribution for previous deeds.[46] The term **disease**, from the view of Western medicine, is the result of a physiologic process. However, in most of the world cultures, the concept of **illness** is intimately related to the spiritual or religious aspects of their respective society. The clash of cultures can sometimes cause confusion in the patient and/or the provider about the true effects of a treatment or illness. This conflict can cause unfortunate outcomes on many levels. In an effort to help identify cultural differences in a clinical setting, providers can ask patients questions to help elucidate the previous unforeseen differences.

One of the most studied and widely used clinical models is the Patient Explanatory Model (PEM). It includes eight questions to evaluate a patient's explanation of disease (**Table e2-3**).[47] The model may best be used when clinicians sense discordance with the patient relating to adherence to a treatment plan or to the overall visit (see the Clinical Presentation box for an example of how to use the PEM).[48]

TABLE e2-3 Patient Explanatory Model—Eight Questions to Elicit Patient Understanding[47]

1. **What** do you think has **caused** your problem?
2. **Why** do you think it **started** when it did?
3. **What** do you think your **sickness does to you**?
4. **How severe** is your sickness? Will it have a short or long course?
5. **What kind of treatment** do you think you should receive?

6. **What** are the most important **results** you hope to receive from this treatment?
7. **What** are the **chief problems** your sickness has caused for you?
8. **What** do you **fear** most about your sickness?

CLINICAL PRESENTATION Using the Patient Explanatory Model versus the Western Biomedical Model (WBM)

A 55-year-old Latin American woman presents to the clinic for smoking cessation therapy. She reports smoking about 15 cigarettes a day, mostly when she is stressed and depressed. She lives in a rural, primarily Spanish-speaking community. Her education is limited to the fifth grade. In her home life, she is not able to make many financial decisions without permission from her husband.

When asked questions using Kleinman's patient explanatory model (PEM), the patient may have responded as follows (*assumptions in Western biomedical model [WBM] are included for comparison*). Review of the possible responses to the questions provides insight about how a disconnect can occur with patients or their family members in developing a treatment plan.

1. **What do you think caused your problem (smoking)?**

   PEM: Well, my blood sugar is high because I smoke.

   WBM: The patient has come in for smoking cessation with no mention of diabetes.

2. **Why do you think it started when it did?**

   PEM: My mother was sick and she passed away about 10 years ago. I started smoking then because of the stress. Right after that, the doctor told me I had diabetes.

   WBM: Type 2 diabetes onset can begin with a number of risk factors including family history and obesity. Tobacco use is a dependence disorder.

3. **What do you think your sickness does to you?**

   PEM: Smoking makes my blood sugar high. That's why I can't control my diabetes.

   WBM: Smoking can affect diabetes, but it also can lead to heart disease, lung disease, cancer, and a number of other comorbidities.

4. **How severe is your sickness? Will it have a short or long course?**

   PEM: My diabetes will not go away unless I quit smoking.

   WBM: Diabetes will continue lifetime. Smoking cessation can occur, and if maintained, a person can continue tobacco free for the remainder of their lifetime.

5. **What kind of treatment do you think you should receive?**

   PEM: If I quit smoking, my diabetes will go away. I will use the patch and gum like you told me. I know I can't pay for the other medicines.

   WBM: To quit smoking, the patient may incorporate behavioral support with nicotine products. With depression, bupropion may also be indicated. The diabetes will require different medications as well as lifestyle

support for diet and exercise.

6. **What are the most important results you hope to receive from this treatment?**

   PEM: That my diabetes will go away.

   WBM: That her general health will improve with smoking cessation. We can support improvement in her diabetes control.

7. **What are the chief problems her sickness has caused for her?**

   PEM: Smoking costs a lot of money, but I can buy cheaper cigarettes in Mexico. I am tired a lot.

   WBM: She may not feel the effects of smoking and may actually feel less anxious. However, lack of control of blood sugar can cause fatigue, frequent urination.

8. **What do you fear most about her sickness?**

   PEM: That I will die soon, like my mother.

   WBM: That smoking can lead to heart disease, lung disease, and cancer. The diabetes can also lead to negative health consequences and poor quality of life.

A modification of the PEM is the "4 Cs" (Call, Cause, Coping, Concerns), and this mnemonic device may be useful for providers.[15] Providers may ask the patient: (1) "What do you *call* the illness?"; (2) "What do you think *caused* the disease or illness?"; (3) "How do you *cope* with the disease or illness?"; and (4) "What *concerns* do you have about your disease or illness?" This simplified version of Kleinman's original questions still provides information about how the patient interprets illness. However, use of the full explanatory model can provide more revealing information.

USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE

Complementary and alternative medicine is defined as any practice for the prevention and treatment of disease that is not usual conventional medicine.[49] Classified under CAM are a broad range of practices that are grouped under four categories: biologically based practices, energy medicine, manipulative and body-based practices, and mind-body medicine. Specific examples of CAM may include dietary supplements, vitamins, herbal preparations, homeopathy, special teas, acupuncture, massage therapy, magnet therapy, spiritual healing, folk medicine, and meditation. Of these practices, the use of herbal medicines likely holds the most relevance in terms of its influence on conventional pharmacotherapy.

Worldwide, an estimated 80% of the population uses herbs; in the developing world, rates can be as high as 95%.[50] To further complicate this situation, recent trends include the use of combinations of herbal products or extracts, vitamins, and various other natural and synthetic ingredients that are packaged and marketed with a pharmaceutical appearance (nutraceuticals) or included in energy drinks. Also of concern is the recent trend of adding pharmaceutical compounds to products sold as "natural remedies."[51] Given the prevalence of herbal medicine use worldwide, the World Health Organization (WHO) has provided guidelines for the growth and collection[52] and manufacturing of these products.[53]

The use of traditional healers and CAM is a cross-cultural phenomenon. A holistic approach for the prevention and treatment of diseases has long been used by American Indians and practices from other cultures have also been important since Spaniards first came to the North American continent more than 500 years ago.[54,55] The

long-standing integration of traditional healing practices has taken a new dimension with globalization and increased Internet access by all populations. For example, Chinese practices of traditional medicine are expected to be easily found in United States cities with large populations of Asian heritage but they may also be common in cities where Asians-Americans are a relatively small part of the population.[56,57] Similarly, products like prickly pear cactus ("nopal"), a plant native to Mexico and the Southwest United States and used to treat diabetes, has been exported to and used in China.

In the United States, the most recent national survey documented CAM use in more than 35% of the population.[49] However, certain regions of the country with large populations of diverse racial and ethnic groups may actually use CAM more frequently. For example, in areas near the border with Mexico, herbal product usage rates have been documented at 65%.[56,57] In a 2012 systematic review of the prevalence of herb usage among racial and ethnic minorities, the overall (ranges) rates were reported as followed: African Americans 17% (1%-46%), Hispanics 30% (4%-100%), and Asians 30% (2%-73%).[58]

With increasing use of CAM, healthcare providers should consider potential problems with conventional pharmacotherapy. CAM practices generally are not considered standard medical approaches. Unlike standard treatments, they may not go through appropriate research methods or quality assurance to prove they are safe and effective; as a result, less is known about most types of CAM. In the United States, distributors of herbal products are not required to follow current Good Manufacturing Practices.

Surveys have demonstrated low disclosure rates of CAM use by patients to their healthcare providers. Minorities —including Asian Americans, Hispanics, and African Americans—may have lower disclosure rates than non-Hispanic whites for two reasons: conventional providers do not ask about CAM use, and/or patients may be concerned about disapproval from their providers.[59] One strategy for inquiring about CAM use is to ask open-ended questions and to avoid being judgmental when patients do report their use of CAM. For example, providers could ask, "What vitamins, herbal products, home remedies, or supplements do you use to treat (insert condition)?" instead of asking, "Do you take supplements?" A recent study has documented that Latinos disclose at higher rates when asked specifically about use of herbal medicine teas.[60] It is beneficial to have an understanding of patterns of CAM use by different racial, ethnic, or cultural groups, but it is equally important to evaluate each individual with an approach that encourages disclosure and inspires trust. When inquiring about the use of CAM, the approach of the healthcare provider must be open, neutral, nonjudgmental, and respectful of the individuals' cultural practices and their choice to use traditional medicine. In cases where the provider identifies any concerns or potential harm, when they approach the issue in the manner described above, they are in a better position to provide the patient with the necessary guidance. As health science training integrates more understanding of CAM practices, especially herbal medicines and dietary supplements, healthcare professionals will be better equipped to address CAM related issues and concerns.

CULTURAL VALUES AND BELIEFS

6 Numerous factors can influence cultural values and beliefs toward healthcare as suggested by social determinants of health. Age, gender, race, ethnicity, sexual orientation, religion, geography, neighborhood, acculturation, and linguistic identities all shape how people behave and what they value. One of the dangers of learning to work with patients and families from different cultures is confusing stereotypes with generalizations. **Stereotypes** may be damaging to patients as they are an end point or assumption about the way people will behave.[15] **Generalizations**, however, can provide a framework or beginning to understanding how patients *may* respond in healthcare situations.[15] When developing a framework to work with patients, understanding the degree to which individuals identify themselves within different cultures is worthy of consideration.

Social Identity

One aspect of culture is linked to how social identity is defined. **Social identity** can be described as a person's sense of self, based on memberships to various social groups.[61,62] Social group membership can be based on gender, age, ethnicity, race, family, sexual orientation, religion, or other cultural factors. Individuals' social identities consist of membership to multiple groups. For example, a person may identify as a young (age), Catholic (religion), female (gender), Hispanic (ethnicity), of African descent (race). Identification with a particular group (eg, Hispanic) is the individual's **ingroup**. Conversely, group in which the individual does not identify (eg, non-Hispanic Caucasian) is the individual's **outgroup**.[63]

An individual's identification with a social group is influenced by contextual factors,[64] such as individuals within the immediate environment. For example, an African American woman may identify more strongly with her gender ingroup in the presence of several African American males but identify more strongly with her racial ingroup in the presence of several white women. In other words, there are instances in which one social group membership may become more salient and thus be more influential on behaviors than other group memberships. Understanding how strongly a patient identifies with a particular social group will assist healthcare providers in identifying the influence of that social group's cultural norms and expectations on the patient's healthcare decision-making. For example, a patient who has recently immigrated must redefine how they identify with cultural ingroups or outgroups in the new context. This, in turn, defines how individuals experience the process of acculturation within dominant cultural groups in a new host country.

Acculturation

Culturally competent providers are familiar with the concept of acculturation and its role in the area of health. **Acculturation** can be defined as the process by which individuals from one cultural group experience changes in behaviors, attitudes, and beliefs as a result of continuous contact with a different culture.[65] Acculturation has been studied in relation to a number of health behaviors and its influence cannot be underestimated.[66]

Levels of acculturation have been associated with differences in help-seeking behavior, healthcare utilization rates, adherence, presentation and perception of illness, attitudes toward healthcare providers and treatment, and beliefs about healing.[67] Acculturation measurement tools have been used in research in an attempt to capture the relationship between acculturation and health disparities or health outcomes.[13] Research has been conducted in Mexican American populations with increasing studies in other racial, ethnic, and immigrant populations. Some weaknesses in theories of acculturation (in studies conducted in the United States) exist because assumptions are made that immigrant populations are able to choose to participate fully in American society and that the ultimate goal is to assimilate into American culture.[13]

Regardless of how acculturation is measured or researched, understanding concepts related to acculturation can be helpful to providers. One model of acculturation that provides a framework for understanding acculturation describes assimilation, integration, marginalization, and separation as four possible outcomes of the acculturation process. In this framework, there are two cultures of reference, the home culture (the culture *from* which the individual comes) and the host culture (the culture *to* which the individual is introduced or is immersed).[68] This relationship can have varying levels of effect on each other and can be bidirectional in nature.

Individuals may have the least difficulty adapting to the new host culture when they are able to assimilate or integrate.[68] In **assimilation**, individuals lose (willingly or unwillingly) much of their identity from their home culture and adopt the new host culture. In **integration**, the individual is able to adopt identities from both the host and home culture. These individuals may be considered bicultural or even bilingual.

Through the process of marginalization and separation, individuals have a more difficult time adapting to a new host culture.[68] When individuals are **marginalized**, they have strong identities to their home culture and may not be able to adapt well to the host culture. Marginalized individuals may include more recent immigrants or refugees. Persons who are in **separation** may never really understand their home culture or their host culture. They may live "in between" cultures, never fully learning the home culture or host culture. This phenomenon may occur in children who have never completed their basic education in either culture (thereby never mastering one language) or who do not have enough exposure to cultural events and traditions from their home or host culture to entirely understand or appreciate either heritage. When interacting with bicultural or bilingual patients, it is important for healthcare providers to consider the cultural group most salient to the patient's social identity as the influence of home or host culture can vary due to contextual influences.[69,70,71]

Individual versus Collective Influences

There are other factors that influence how persons interact in cultures. For example, different cultures place varying emphasis on the importance of individual and the collective influences on decision-making.[72] Those persons who come from more **individualistic cultures** (eg, the United States) are more likely to place greater emphasis on an individual's self-reliance and emotional distance from others within the individual's group.[73] Patients from individualistic cultures expect greater individual responsibility for healthcare decisions.[74]

Alternatively, persons who come from **collective cultures** experience greater emphasis on interdependence and family integrity.[73] Patients from collectivist cultures experience increased community participation with their healthcare decision-making.[75] It is important to note that some cultural groups (eg, Latino, African American, and American Indian) may identify as being particularly familistic—the family unit has a core influence on their cultural and community identity.[76] A greater emphasis on the family unit leads to different attitudes and behaviors such as different expectations for seeking healthcare (eg, an aunt or godmother caring for the ill) and the development of different beliefs, norms, and traditions.[77]

Clinical Controversy… APPLYING UNDERSTANDING OF ADDRESS BARRIERS IN HEALTH

Select any one of the patients from diverse backgrounds introduced at the beginning of the chapter. What are the factors that influence their health that are based on genetics? Individual and family choices? Community influences? Larger city and policy structures? Based on the information provided, what social identity and acculturation characteristics are involved? Look up information about healthcare beliefs and values based on how the patient self-identifies with religion and race or ethnicity. If approached by one of the patients, providers may argue that "we can't solve everything in healthcare. I only have so much time during a visit." How might you counteract those statements? What changes can be made at a provider level, clinic/hospital level, and at a larger system-wide level to improve care across cultures?

Health Beliefs and Practices Found in Various Cultures

Although it is not feasible to understand the intricacies of every culture, it is possible to explore common characteristics of various cultures in order to learn more about them. It is important to recognize that the traits identified in this text are generalizations about a particular cultural group. Not every member of these groups will demonstrate these characteristics. Ultimately, care should be individualized, but the following generalizations can serve as a guide to working with patients from a particular race, ethnicity, religion, or other cultural group. In some cases, clinicians can apply the mantra, "Treat others as *they* would want to be treated," also called the *Platinum Rule*.[67]

Individuals from different cultures may have different beliefs about the origins of health and illness and may not

subscribe to the WBM.[35,47] Some cultures may view health as the result of harmony with nature or the balance of natural forces. Still others may believe that health is a result of good luck or reward for good behavior. Views about the origins of illness may also differ depending on culture. Some believe that illness is the result of an imbalance in natural forces while members of other cultures may point to supernatural powers as the cause of disease or illness. Various cultures describe illnesses that are only recognized within that culture. These "culture-bound syndromes," also often referred to as folk-illnesses, are often manifested through changes in behavior, cognition or affect without the presence of signs or symptoms that can be objectively confirmed.[15,78] There are a variety of culture-bound syndromes that have been documented. For example, conditions, such as *empacho* (stomach pain caused by ball of food blocking the digestive tract), *susto* (illness arising from extreme fright), *mal de ojo* (illness caused by the "evil eye" resulting from excessive admiration or envy), or *caída de la mollera* (depression of anterior fontanelle in infant), can be found in Latin American cultures.[36,46] *Dhat* is a culture-bound syndrome reported in Indian cultures that manifests as fatigue, weakness, or sexual dysfunction thought to be caused by loss of semen during urination, masturbation, or nocturnal emission.[79] Culture-bound syndromes are also found in Western cultures. Anorexia nervosa, an eating disorder characterized by extreme weight-loss caused by self-starvation, is well-recognized in Western cultures but may not be acknowledged in other cultures.[80]

Certain healthcare practices may stem from historical events or experiences not explained by the WBM. Some African Americans, for example, may practice *geophagy* (eating of earth or clay).[46] This practice has historical significance and was noted among some slaves from Africa who may have focused on eating red clays, which are iron rich.[46] Additionally, African Americans may not trust the healthcare system or research projects because of previous injustices, including slavery and the Tuskegee syphilis study.[81] The latter example refers to research conducted by the United States Public Health Service from 1932 to 1972, in which African American men with syphilis were recruited to participate in a study to investigate the natural course of untreated disease.[81] This project continued until the early 1970s despite the availability of penicillin and confirmation in the 1940s that penicillin was an effective treatment for syphilis.

As discussed previously, it is important to recognize that members of various cultures may employ the use of traditional healers, CAM such as herbs, or other practices such as massage. Traditional healers who may be involved in the care of a patient include *curanderos(as)* in some Latin American cultures, "medicine men or women" in various American Indian communities, voodoo doctors by African Americans practicing voodoo, or *santeros* (mediums) among individuals practicing *Santería* (religious practice originating in Nigeria in which the gods [orishas] of the Yoruban people are matched to Catholic saints and connected to various health problems).[36,46]

Furthermore, religious rituals or ceremonies are often an important part of treatment in many cultures. Some American Indian cultures, for example, may practice divination (diagnosis) or singing in the treatment of illness. Three types of divination include *motion in the hand* (pollen or sand is sprinkled around the patient while song is sung and diagnostician moves hand to determine the cause), *stargazing* (prayer to star spirit is made by stargazer and rays of light thrown by star are used to determine cause of illness), and *listening* (diagnostician listens for certain sounds to help in diagnosis). For some members of American Indian cultures, these practices may have a profound psychologic effect and allow the patient to feel cared for in a personal way.[46] Patients from various religious backgrounds will include prayer as a way of coping with life stresses.[82]

Other culturally based healthcare practices may lead to physical signs on the body that might be taken as signs of injury or abuse. Patients of Asian descent may practice *coining* (coins are dipped in oil and heated and then rubbed on skin), *cupping* (heated glass cups are placed on skin to create vacuum), *moxibustion* (heated incenses or wood applied over the skin), or pinching of skin in order to draw out illnesses.[36] These practices may produce

bruises, burns, or welts on the skin that might be confused with signs of physical abuse.[46] Clinicians should be aware that cultural beliefs may have led to the practice of alternative forms of healing and this should be taken into consideration when evaluating a patient.

Family roles and communication styles may also differ based on culture. Certain cultures have strong family values or close-knit family structures. As a result, the healthcare encounter with patients from these cultures may involve the participation of other members of the family. Communication styles will also vary; thus, clinicians should be aware of communication characteristics when working with patients of various cultures. **Table e2-4** includes various characteristics related to healthcare beliefs, practices, and values that have been found in select racial and ethnic groups represented among the population of the United States.

TABLE e2-4 Cultural Beliefs, Values, and Practices Found in Selected Racial and Ethnic Groups[a,b]

	Beliefs on Health and Illness	Healthcare Practices	CAM Use	Family Role	Communication
African Americans[c]	Health may result from harmony with nature; illness results from disharmony Illnesses may be due to natural causes (God's plan, eating the wrong food, environmental) or unnatural causes (evil origins such as demons, spirits, "hexes") May distrust the healthcare system due to previous injustices (eg, slavery, Tuskegee syphilis study)	Time orientation may be focused on the "present" and may impede preventive care and follow-up Rural patients or patients of low socioeconomic status may wait for emergencies before seeking care Laxatives may be used to "keep the system running" or "open" Blood or organ donation may be rejected out of fear of hastening donor's death May refer to certain foods as causing "high" or "low" blood, which may be confused with blood pressure or blood count	May use traditional healers and folk medicine/CAM Examples include use of herbs, copper or silver bracelets to protect the wearer, poultices to draw out infections May consult magicians, priests, or voodoo doctor in the treatment of "unnatural" illnesses (regional)	Family structure is often strong Child rearing may be shared by grandparents Families often matriarchal (but father or eldest male may be the spokesperson) High esteem for elderly often found	Family members may not permit discussion of serious healthcare problems directly with patient May prefer to be addressed as "Mr." or "Mrs." or by professional title

	Beliefs on Health and Illness	Healthcare Practices	CAM Use	Family Role	Communication
East Asian (eg, Chinese, Japanese, Korean)	Health may involve the balance of yin (cold) and yang (hot); illness often caused by an imbalance A person's body may be viewed as a gift and should be cared for and well maintained May have a distrust of Western medicine Certain numbers, such as the number "4," may be viewed as signifying death	May use combination of Western medicine and traditional Chinese medicine May be upset by the practice of drawing blood (source of life for the body that may not be regenerated) Deep respect for the body may lead to refusal of painful procedures for diagnostic workups or surgery unless absolutely necessary Stigma related to mental illness	Traditional medicine may be used, including herbal products Other practices may include acupuncture, coining, pinching, cupping of skin to draw out illnesses, and moxibustion	Community may be more important than the individual, individual needs may be sacrificed for family Families are often closely bound and include the extended family Family matters are not often discussed in front of others Wives may defer to husbands for medical decisions	Emotions may be spared and physical distance may be preferred A Chinese patient may rarely complain about what is bothering him or her May avoid direct eye contact Hand gestures (eg, beckoning with index finger) may be interpreted as an insult
American Indian	Health may involve harmony with "Mother Earth" Bodies should be treated with respect, just as the Earth is treated with respect as a living organism To maintain health, one should maintain a relationship with nature	Traditions may be passed down through storytelling or oral history Storytelling may be incorporated in some educational settings to convey important messages in disease education May distrust	Traditional healers ("medicine men or women") and rituals/ceremonies are often used by some subcultures May use prayer/special ceremonies for diagnosis and cure of illnesses Examples of special ceremonies include "motion in the hand," stargazing, and listening	May value the group over the individual —cooperation, sharing, balance with nature is important Family and community may be closely connected Respect for elders is often important Family members	May be considered more appropriate to avoid direct eye contact or speaking directly to elders out of respect Important values: respect, equality, kindness, modesty, not drawing attention to oneself Loudness may be associated with aggressiveness

	Beliefs on Health and Illness	Healthcare Practices	CAM Use	Family Role	Communication
	The human body may be divided into two halves—a positive and a negative energy pole, and the energy of the body can be controlled by spiritual means Disease and illness often related to supernatural powers or evil spirits May not believe in the germ theory of modern medicine	documents such as informed consent or advanced directives because of previous historical injustices Cutting or shaving of hair should be discussed with patient as this practice may be associated with mourning	Other methods of treatment include massage, heat treatment, use of sweat baths May use herbal medicine or natural roots Herbs may be seen as "spiritual helpers" and gathered with great care to maintain harmony with nature	may accompany elderly patient to serve as interpreter or to help communicate health information Decision-making varies with kinship structure; women may be primary decision-makers in matrilineal tribes	among the Navajo
Hispanic/Latino	Health may be a matter of good luck or reward for good behavior Illnesses may be caused by imbalances between hot and cold or wet and dry May have pessimistic attitude toward recovery (fatalism)	Treatments may be determined based on the classification of the disease May use *curanderos/as* and CAM along with Western medicine Folk medicine diseases that may be referred to in Hispanic culture are *empacho, susto, mal de ojo, caída de la mollera* Time orientation may be focused on the "present"	May use home remedies and *curanderos/as* (traditional healers) May use religious rituals for treatment of illness, such as prayer offerings, use of medals/amulets /candle, visiting shrines, making promises (*promesas*) to God or to saints in return for recovery from illness Some Hispanics (especially of Puerto Rican or Cuban descent) may practice *Santería*	Families are often very important Families often have close-knit structure More than one family member may participate in the healthcare encounter Integration of the family in decision-making may be important for the success of a treatment plan Older,	Respect (*el respeto*) is often incorporated into the language and appropriate deference in relation to age, sex, and social status is important Developing and maintaining personal relationships (*personalismo*) and trust (*confianza*) toward their healthcare providers is often important

	Beliefs on Health and Illness	Healthcare Practices	CAM Use	Family Role	Communication
		and may impede preventive care and follow-up		traditional wives may defer to husbands for medical decision-making	
Middle Eastern	Cold, damp drafts, and strong emotions may lead to illness May have fatalistic attitude regarding health "Evil eye" (jealousy) may also cause illness Illness may be viewed as punishment for sins from higher being	Preventive care may not be a priority and medication use is common Patients may expect a prescription for illness from their provider Mental illness may be seen as a stigma and may prevent patients from seeking psychiatric care	Amulets may be used to protect the wearer from "evil eye" or other causes of illness Foods viewed as "hot" or "cold" may play a role in maintaining health May use herbal products to treat certain illnesses	May be appropriate to speak to family spokesperson Women may defer to husbands for medical decisions Personal problems may be taken care of by family	May prefer if provider shares information about themselves in order to facilitate building of relationships May avoid direct eye contact with members of opposite sex Sexual segregation may be preferred (eg, assign provider from same sex as patient) Appropriate conversational distance is short
South Asian/East Indian	Health may be due to connection of mind, body, and spirit Many may believe in the traditional Indian system of medicine, *Ayurveda* (*ayu* meaning "life" and *veda* meaning "knowledge") Ayurvedic medicine	Healthcare providers are often seen as authorities; patients may take a more passive role and prefer for a provider to make decisions Mental illness may be viewed as a stigma and may be concealed or presented as somatic	May practice Ayurvedic medicine for preventing and curing illness "Hot" or "cold" foods (based on qualities of the food and not temperature) are often suggested for certain conditions Practice of Ayurvedic medicine may recommend that certain herbs be used for healing May use other home	Close female family members often remain with the patient Father or eldest son may make decisions for family Husbands may answer questions for wives	Direct eye contact may seem disrespectful, particularly among the elderly Silence may indicate respect or approval Up-and-down head nod may signal disagreement where a side-to-side head bob may signal agreement

	Beliefs on Health and Illness	Healthcare Practices	CAM Use	Family Role	Communication
	involves maintaining a balance between the physical, mental, and spiritual being Some believe that mental illness is due to the "evil eye" Hindus may believe that illness is due to *karma*	complaints (eg, headaches, stomach pain) Sacred thread worn around the neck of women or chest of men should not be cut without permission of the patient or family	remedies for illness (massage, bathing)		Patients may prefer same-sex providers due to modesty May avoid shaking hands with females unless female offers first

CAM, complementary and alternative medicine.

[a]These practices and beliefs may be found among persons (not all) who identify with the racial or ethnic groups listed above.

[b]Other resources for information on racial and ethnic groups include the following:

- EthnoMed: *http://ethnomed.org/*
- Lesbian, Gay, Bisexual and Transgender Health: *http://www.cdc.gov/lgbthealth/*
- Migrant Clinician's Network: *http://www.migrantclinician.org/*
- Refugee Health Information Network: *http://rhin.org/*
- Office of Minority Health, U.S. Department of Health and Human Services: *http://minorityhealth.hhs.gov/*
- Office on Women's Health, Quick Health Data Online, U.S. Department of Health and Human Services: *http://www.healthstatus2020.com/owh/*

[c]May be found in pockets in the United States and not necessarily found in recent immigrants from Africa.

Data from references 15, 35, 46, 83,84, 85.

The cultural influence of religion on healthcare can be critical. For example, a patient who comes from the Jewish or Muslim faith may be unwilling to accept omega-3 fatty acids as a therapy option for hypertriglyceridemia because the gelatin formulation may not adhere to the dietary restrictions of the religions.[46] A female patient whose religion embraces greater physical distance between women and men in social situations may not be comfortable working with a male healthcare provider. A devout Christian family may be concerned about discussions of contraception or emergency contraception. To elicit information about a patient's religious or spiritual concerns, providers may ask, "I feel that I can help you better if you can tell me what religious or spiritual needs I should consider in your healthcare." **Table e2-5** lists some health beliefs and practices found in common

worldwide religions.

TABLE e2-5 Healthcare Practices and Beliefs Found in Selected World Religions[a]

	Contraception	Medications or Special Dietary Restrictions	Healing Practices
Western Religions			
Catholic	Natural family planning No birth control	May use medications	Prayer, candles, laying on of hands Holy sacraments may be offered to ill Visits from priest
Protestant Christian	Varied beliefs	Varied restrictions	Prayer Diverse opinions of divine intervention Visits from pastor
Judaism	Permitted (often Orthodox may not)	Pork and shellfish products often forbidden Meat preparation meets Kosher standards Fasting during Yom Kippur (day of atonement)	Prayers Visits from rabbi
Islamic	Permitted	Pork and alcohol often prohibited Meat preparation meets *halal* ("lawful") standards Fasting during Ramadan	Some herbal remedies and faith Visits from imam
Eastern Religions			
Buddhism	Permitted	Vegetarian diet Some holy days require fasting	Prayer Picture of Buddha may be used to facilitate meditation
Hinduism	Permitted	Vegetarian diet; meat products often prohibited Several holy days require fasting Most medications permitted	Includes traditional faith healing

[a]These practices and beliefs may be found among persons (not all) who identify with the religions listed.

Data from references 46, 86.

A diverse society will yield diverse health beliefs and practices. Potential differences among individuals in their acculturation levels can affect observance of cultural practices. Developing a general understanding of common cultural health behaviors can help clinicians to approach patients in a culturally competent manner.

CROSS-CULTURAL COMMUNICATION

7 Developing communication skills to interact with diverse populations includes recognizing personal styles of communication. However, providers should have communication skills to recognize if a barrier may exist, and they should work to care for patients regardless of the language they speak. Understanding personal communication styles provides insight to clinicians so they may be able to prevent or acknowledge any bias or expectations during clinical encounters. By recognizing personal cultural biases, clinicians can better serve the patients.

Barriers related to cross-cultural communication can affect the provider-patient relationship. From the perspective of The Joint Commission, the threat to effective communication is threefold: language differences, cultural differences, and low literacy levels.[43,87] Patients can also have communication barriers because of differences in age or gender with the provider.[8] A person with a lower level of education may not be comfortable working with a provider who has obtained a college education and/or attended graduate school. An older patient may not believe that a younger provider has enough work or life experience to be qualified. A man from a more conservative religious upbringing may not feel it is appropriate to be counseled by a female provider. Other barriers to care may exist because of fear and distrust in the provider due to race or ethnic background, prejudices, or lack of familiarity or knowledge of the culture.[8,48] For example, a patient who is of Chinese descent may not feel comfortable with a provider who is Mexican American because of a perception of unfamiliarity and a lack of opportunity to interact with persons of the other background.

Communication Skills

Communication skills needed to work with patients from diverse cultures include looking for nonverbal cues.[8,46,48] Providers can often gain clues for how to interact with patients by observing their behaviors and following patients' mannerisms. Patients will have varying preferences of eye contact, personal space, and physical contact.[8,46] Some patients prefer indirect eye contact and may view direct eye contact as rude or intrusive. A comfortable distance for personal space also varies across cultures.[8,48,88] In some cultures, patients prefer only a handshake or a nod of acknowledgment for greetings, whereas in other cultures, patients will welcome a light tap on the shoulder or even a hug.

Verbal cues include recognizing whether patients prefer to be called using their first name or last name.[8,15,46] Some patients embrace the opportunity to talk and get to know their provider before jumping into medical information. Using a vocabulary that is consistent with the culture and education of patients is another strategy that can help providers gain trust.

To develop skill sets to work with patients from diverse communities, providers can identify cultural "brokers" or community liaisons.[17] These liaisons are often respected community members and leaders who recognize the importance of connecting the healthcare community with the community being served. Liaisons may be religious leaders or mothers and grandmothers in the community. The key is to align providers with these community liaisons to help interpret what cues (nonverbal and verbal) and ways of communicating are most appropriate.

Limited English Proficiency and Hearing Impairment

According to Census 2010 data, 20% of people living in the United States 5 years of age and older speak a language other than English in the home.[19] LEP occurs when a person is not able to communicate effectively (reading, speaking, writing, or understanding) in the English language because of English not being the primary language.[21,40]

8 Linguistic competency encompasses understanding issues related to working with patients with LEP and/or hearing impairments such as learning basic terms and greetings, working with an interpreter or language-assistance lines, and using non-English patient education/materials.

For healthcare providers to more effectively communicate information to patients with LEP, it is important to identify the most common languages spoken among their patients. As outlined in the CLAS standards, organizations receiving federal funds (indirect or direct) must provide meaningful access to persons with LEP.[21,39,40] Using professionally trained interpreters has been shown to improve clinical care, improve patient safety, and increase satisfaction for patients with LEP.[89,90,91,92] In addition to having qualified interpreters, it is important to train healthcare providers to use and interface with professional phone interpreter services.[93] A variety of online resources are available to begin learning about working with interpreters and translators (**Table e2-6**).

TABLE e2-6 Resources for Working with Interpreters and Translators

Tips for Working with Healthcare Interpreters:

www.migrantclinician.org/files/resourcebox/Tips_for_Providers.pdf

Tips for Working with Sign Language Interpreters:

www.ncdhhs.gov/document/tips-working-sign-language-interpreters

Sight Translation and Written Translation: Guidelines for Healthcare Interpreters. The National Council on Interpreting in Health Care

www.ncihc.org/assets/documents/publications/Translation_Guidelines_for_Interpreters_FINAL042709.pdf

While interpreter services may exist, challenges persist to identify patients with language assistance needs as well as to maintain a consistent and qualified language assistance workforce in the healthcare system.[94] In the event that a trained interpreter is not available, the clinician may need to work with an ad hoc interpreter (eg, bilingual coworker, family member, and friend), which poses a greater risk for error.[48] Children (minors) should not be used as interpreters. Clinicians should be actively aware of the interpretation situation. If the interpretation appears to be muddled or the process seems confusing, then it is appropriate to insist upon finding a more reliable source of interpretation.

Organizations and clinicians can also create a positive environment for patients with LEP by having written materials translated into the common languages found in the served population. Materials should be translated by certified translators and not by staff members, family, or friends who state that they are bilingual.

Tools for Working Across Cultures

Clinicians should recognize that assessing culture in the patient encounter is not necessarily a new concept.[48] The "social history" of patients provides room to explore the patient's individual and family situation, work and home environment, unique dietary needs, and education background, among other sociocultural influences. 9 However, tools have been developed to help providers further address unique cultural situations that can arise in the patient encounter.

One model frequently cited for working with patients from diverse cultures is LEARN (listen, explain/empathize, acknowledge, recommend/respect, and negotiate).[88] In the LEARN model, providers are called to *listen* to their patients' perceptions of their health with an open mind. Providers should then take time to *explain* their perceptions and *empathize* with the patient. *Acknowledgment* of commonalities and differences in the approach to understanding health and treatment options for the patient can help to build trust.[88] When providers *recommend* a treatment plan in a way that is *respectful* of the patient's culture and beliefs, the provider and patient can find a common ground. With this baseline respect, a plan can be *negotiated* to *navigate* through the healthcare system.

While barriers do exist for cross-cultural communication, clinicians can overcome these challenges by understanding verbal and nonverbal cues to communication. They also should recognize that quality interpretation is essential in the patient encounter. Tools for navigating across cultures include learning how to listen, empathize, and negotiate a treatment plan with patients.

ORGANIZATIONAL AND INDIVIDUAL SELF-ASSESSMENT

Both individuals and organizations demonstrate the capacity for providing a culturally competent environment. 10 Before understanding other cultures*, individual practitioners* should understand their own personal values and beliefs. Additionally, assessment of attitudes, practices, policies and structures *within an organization* can assist in planning for and incorporating cultural competence into the provision of healthcare within organizations.[18]

The process of self-evaluation may begin with the simple act of a practitioner reflecting on the values and beliefs that shape their world view, their perceptions of health and illness, and the existence of stereotypes or myths about other cultures.[16] To assist in this process, self-assessment instruments have been developed to guide individual healthcare providers in their reflection of cultures, values, and beliefs.

A variety of assessment tools designed for use by individual practitioners are available in both written and online formats (**Table e2-7**).[95,96,97,98,99,100,101,102,103,104] Domains that are typically assessed by these instruments include values and belief systems, communication styles, experience in cultural diversity, materials and resource evaluations, and others.[96,97] Many of these tools pose specific examples or questions within each domain that allow practitioners to assign ratings that reflect their level of cultural competence. Although there are no correct answers, these instruments provide individuals the opportunity to identify personal attitudes, values, and beliefs that do not foster cultural competence. By becoming aware of these issues, the practitioner may then make plans to improve upon or change these characteristics and move toward a more culturally competent approach to providing healthcare.

TABLE e2-7 Assessment Tools for Practitioners and Organizations

Name	Domains Assessed	Description
Promoting Cultural and Linguistic Competency: Self-Assessment Checklist for Personnel Providing Primary Healthcare Services[9]	• Physical environment • Materials and resources • Communication styles • Values and attitudes	• 37-item checklist • Individual practitioners are asked to rate statements in each domain as something that they do "frequently, occasionally, rarely, or never"
Healthcare Provider Cultural Competence Instrument	• Awareness/sensitivity	• Developed to be applicable for

Name	Domains Assessed	Description
(HPCCI)[102]	• Behaviors • Patient-centered communication • Practice orientation • Self-assessment	health care providers from a variety of disciplines
Clinical Cultural Competency Questionnaire (CCCQ)[103,105]	• Knowledge of sociocultural issues • Skills in dealing with sociocultural issues • Comfort level in dealing with encounters/situations involving sociocultural issues • Attitudes • Education/training in cultural diversity	• 63-item measure designed to assess physicians' provision of culturally competent care • Has been evaluated and adapted for use in assessing pharmacy students' cultural competency • Can use this as a needs assessment in planning educational interventions that address cultural diversity
Self-Assessment of Perceived Level of Cultural Competence (SAPLCC)[104]	• Assesses six-domains of cultural competence (Knowledge, Skills, Attitudes, Encounters, Awareness, and Abilities)	• 68-item tool adapted from the CCCQ and the California Brief Multicultural Competency Scale (CBMCS) • Validated in pharmacy students and recommended for use in pharmacy schools
Cultural and Linguistic Competence Policy Assessment (CLCPA)[98]	• Knowledge of diverse communities • Organizational philosophy • Personal involvement in diverse communities • Resources and linkages • Human resources • Clinical practice • Engagement of diverse communities	• 51 broad categories for questions • 43-page manual, "A Guide for Using the CLCPA Instrument," is available
Organizational Cultural Competence Assessment	• Organizational values	• Provides an analytic, organizing framework that is adaptable to the