



PART 1

Social,
Ethical, and
Economic
Issues of
Aging



CHALLENGES IN GERIATRIC CARE

REBECCA B. SLEEPER

LEARNING OBJECTIVES

1. Evaluate the applicability of clinical literature to the elderly patient using an approach that is tailored to specific subgroups of the geriatric population.
2. Differentiate the roles of healthcare professionals and the various services and venues available in the care of geriatric patients.
3. Infer scenarios in which geriatric patients are at risk for suboptimal care and intervene when breakdowns in the continuum of care are identified.
4. Recognize the impact of caregiver burden on patient outcomes.

KEY TERMS AND DEFINITIONS

ASSISTED LIVING FACILITY: Living environment that provides added services to the individual who is safe to live in the community environment but requires some assistance with various daily activities.

CAREGIVER BURDEN: Psychosocial and physical stress experienced by an individual who provides care to another person.

CERTIFIED GERIATRIC PHARMACIST: Pharmacist who has achieved certification from the Commission for Certification in Geriatric Pharmacy.

CERTIFIED NURSE'S ASSISTANT: Individual who has earned a certificate to practice as a nurse's assistant and who may work in a wide variety of healthcare settings ranging from long-term care facilities to private homes.

GERIATRIC: Adjective generally used to refer to an older individual.

GERIATRICIAN: Physician with expertise, as demonstrated by fellowship or other added qualifications, in the care of older persons.

GERONTOLOGICAL NURSE: Nurse with expertise, as demonstrated by exam or other added qualifications, in the care of older persons.

INFORMAL CAREGIVER: An individual who does not have formal training as a healthcare professional but who provides daily care to another individual; usually unpaid.

INTERPROFESSIONAL TEAM: Healthcare team made up of multiple health professionals, which may include physicians, nurses, pharmacists, physical therapists, occupational therapists, speech therapists, and other allied health professionals, dietitians, social services coordinators, and psychologists.

LONG-TERM CARE FACILITY: Environment of 24-hour care for individuals who require significant assistance or supervision with daily activities.

INTRODUCTION

The first challenge in addressing the healthcare needs of a **geriatric** population is in determining what geriatric actually means. There is not a universally accepted definition. In general, geriatric refers to an older person; however, age is a relative descriptor and may not always apply to various healthcare interventions.

Social or legal definitions of older people are often based on age. For instance, age 65 is commonly considered the threshold age for the geriatric population, and most healthcare literature criteria will use this definition. Government statistics, such as census data, also define older people based on this age, and 65 is the age for eligibility for federal programs such as Medicare. The Food and Drug Administration (FDA) also requires available clinical trial data for individuals over the age of 65 to be included as part of the required labeling for medications.¹ Manufacturers are required to report special considerations for dosage adjustment or avoidance in older patients based on age-related changes in drug metabolism or sensitivity. However, age-based definitions of “older” populations vary. One of the nation’s largest public action groups, the American Association of Retired Persons (AARP), uses a threshold age of 50 years²; in contrast, full retirement age for the purposes of Social Security benefits has increased to greater than age 65 and up to age 67 for individuals born after 1960.³

Despite a lack of agreement regarding a specific age threshold, there are drawbacks to assuming that all individuals over a given age are

the same or have the same healthcare needs. Clinicians would not consider it appropriate to treat a 5-year-old child the same as a 40-year-old adult, as the 35-year span between the two ages is associated with significant developmental changes. Likewise, it would be inappropriate to treat a 65-year-old adult the same as a 100-year-old adult, because they are also at the extremes of a 35-year span. The specific physiologic changes between the two adult patients are distinct from those that separate a child from an adult, but the principle is the same. Failing to recognize the potential for altered response to medication therapy across the age span can result in adverse outcomes.

Therefore, age is only one factor that must be considered within the context of overall health status and functional ability. In addition, despite age or health status, healthcare needs are often addressed very differently depending on the patient’s environment. There are many ways to arrive at a description of the geriatric patient. This presents an inherent problem when it comes to medical decision making for the geriatric patient because it can be difficult to know whether (or how) to apply evidence-based strategies to those individuals who may not actually be represented in the population from which the evidence was derived. Although general treatment principles are important to understand, clinicians must also recognize the heterogeneity of the geriatric population. This presents a tricky balance for our society and healthcare system: providing optimal healthcare to a huge and growing population while recognizing the differing needs of subgroups.

This chapter outlines the distinctions within the geriatric population and presents the many challenges faced by healthcare providers and caregivers in working with this diverse group. It discusses the various roles of the healthcare team and the different care venues. Most importantly, it addresses problems in the healthcare system that allow for suboptimal geriatric care.

SUBPOPULATIONS OF ELDERLY PATIENTS

For practical purposes, there is a need to classify subgroups so that the approach to the elderly patient can be structured and evidence-based yet as specific as possible to individual needs. Interpretation of clinical literature should be performed with these considerations in mind.

There are three primary angles from which to evaluate the applicability of the evidence base to an older patient: age strata, health or functional status, and living/care environment. Each of these can impact the way a health intervention is delivered, how safe or effective it is, or how it can be monitored or evaluated.

Age Strata

Sometimes cohorts of subjects in large studies or clinical trials are divided into age strata, and this can be one way of comparing and contrasting health outcomes or treatment effects in subgroups of geriatric patients. For instance, a subject population might be divided into groups by decades, such as 60–70, 71–80, 81–90, or >90. Depending on the body of literature being evaluated, there is also terminology such as *young old* versus *old old* that suggests a similar, albeit more general, stratification of age.⁴ The cut-off point between young-old and old-old, though still somewhat arbitrary, is usually age 80–85 years. A focus on the old-old population is becoming increasingly important, given the rapid growth of this segment of the U.S. population.

The biggest challenge in evaluating differences in outcomes between groups is the limita-

tion in statistical power as a result of relatively low enrollment of subjects, particularly in the upper age strata. This can hamper the ability to detect a difference in outcomes for these patients. For this reason, sometimes the most useful information that comes from evaluating the age range of subjects in a study or clinical trial is the recognition of the upper age limit for which there are meaningful data. This can be determined by examining not just the average age of study subjects, but the upper end of the age range reported in a clinical study's subject characteristics. Based on this data ceiling, a clinician must determine whether it is appropriate to assume that an outcome can be extrapolated to the oldest patients.

In addition, age is one of several considerations that are included in estimates of prognosis. The risk-benefit assessment that must occur when deciding whether to implement a medication intervention includes an assessment of how long it is expected for the treatment effect to be realized and whether the individual is likely to live long enough to achieve that benefit, especially if there are risks associated with exposure to the medication.

Health or Functional Status

Sometimes, patients with certain comorbidities or disabilities are excluded from research protocols; therefore, clinicians must make judgment calls about the risks and benefits of employing usual treatment in patients with multiple comorbidities or functional deficits. In addition to concerns about how medication therapy outcomes may be altered by drug–disease interactions in an individual with complex comorbidities, there are multiple ways in which functional status can affect the likelihood of achieving the expected therapeutic outcome.⁴ Cognitive function and physical function are two domains where deficits can significantly affect medication outcomes. In these cases, the contributions of cognitive status to drug outcomes may be many: individuals with these deficits may be disproportionately vulnerable to drug side effects that exacerbate their

underlying condition, or the deficits may impede the ability to appropriately administer the drug therapy regimen.

An individual with mild cognitive impairment who manages his or her own medication regimen may be vulnerable to poor adherence or medication self-administration errors. Such an individual may also be less able to self-monitor for efficacy and may not appropriately interpret or report potential side effects. Problematic medications may include those with narrow therapeutic windows, such as warfarin, or medications which require a specific technique to administer, such as bisphosphonates. These may be the interventions of choice from a drug–disease standpoint, but their safe use requires consideration of logistical hurdles, which, if not overcome, can tip the balance of benefit to risk.

Similar concerns apply for individuals with deficits in physical function because medication self-administration can be affected by altered vision, coordination, motor function, or swallowing function. Functional deficits may also affect decisions about the appropriateness of medication therapy as it relates to prognosis. For instance, bladder antispasmodics can provide a significant benefit for an individual with urge incontinence, but consider how the ratio of benefit to risk is altered in an individual who is functionally dependent for all his or her personal care and who is dependent on incontinence undergarments despite the use of the medication.

Living or Caregiving Environment

Living or caregiving environment can impact an individual's risk factors for certain illnesses; accessibility to diagnostic tests/procedures; ability to access, administer, or receive treatment; and ability to undergo appropriate follow-up. Whether interpreting epidemiology data or outcomes in clinical literature, it is important to consider the setting in which the research was conducted. For instance, studies that evaluate the risk of falls and related injury will identify different fall rates and risk factors in the community setting versus the long-term care setting.

Likewise, a clinical trial that demonstrated a treatment benefit of a medication in an independent-living community population may not achieve the same outcomes in a population of hospitalized patients. Finally, the ability to ensure that a clinical intervention can be implemented and monitored in the same manner as a clinical trial depends on the resources available to the individual in the environment where he or she lives. Does the patient have to drive to an office or clinic to receive care by a health professional? Does he or she qualify for reimbursement to receive services in the home? Does the environment provide medication administration assistance? If so, to what degree? Is there 24-hour supervision for assistance with daily activities and monitoring of health status?

KEY POINT: Subgroups can be defined in numerous ways. Three of the most common are age strata, health or functional status, and living environment.

Applicability of Clinical Literature

When evaluating the applicability of the clinical literature to a geriatric subgroup, several questions should be considered:

1. Are there any studies or clinical trials designed for, or conducted in, populations that mirror the characteristics of the subgroup in question?
2. If not, are there other types of publications involving geriatric patients that might shed light on the nature of medication response? For example, there may be no clinical trials of a medication in elderly populations, but there may be case reports that describe either treatment response or adverse events in older patients.
3. Failing this, broaden the search to literature in the general adult population. Evaluate the inclusion/exclusion criteria or baseline characteristics of the study population. Are there

any subjects included that are representative of the subgroup in question? If so, how many?

It is also important to be careful about interpreting the applicability of consensus guidelines in the adult population for geriatric patients. Consider whether the guideline is specific to older populations or, if not, if there is any elderly-specific language included. If recommendations are made for the older patient, determine whether the guideline identifies specific subgroups of the elderly population or if it suggests that the recommendation is universal to all older patients. Regardless, a good strategy is to evaluate the individual studies cited by the guideline as support for the recommendation. After evaluating the inclusion/exclusion criteria and baseline characteristics of the populations in those studies, determine whether application or extrapolation is appropriate to all older patients.

KEY POINT: Scrutinize clinical literature to determine how elderly patients are represented.

VENUES OF CARE

Who Provides Care?

Many individuals provide care to older patients. Formal healthcare services are provided by physicians, nurses, pharmacists, and allied health professionals. Specific credentials are not required to care for older patients. In fact, with the exception of those who specialize in pediatrics, almost all health professionals will provide care to older patients regardless of their discipline or practice setting. Based on the growth of the oldest strata of the population, competence in geriatric care will be imperative. However, there is a growing need for a focus or expertise in this area, and various training is available for health professionals wishing to specialize in geriatric care.

Physicians

Physicians in almost all areas of specialty will have significant interactions with older patients. Many physicians who have practices largely comprised of older patients may have earned, through experience, significant practical knowledge about meeting the special needs of this population; however, official recognition as a geriatrician implies additional training and certification.⁵ There are two primary routes for this. One is through examination, where a certificate in added qualifications in geriatric medicine is available to physicians in the areas of internal medicine or family medicine. Other added qualifications offered by examination include certification in osteopathic geriatrics or geriatric psychiatry.⁶ The other route is through fellowship training in geriatrics. A fellowship of 1–3 years in the specialty area of geriatrics is usually completed after residency training in either internal medicine or family medicine.⁵

Nurses

Nurses of all levels of training provide care to older patients across a broad spectrum of care venues. There are four certification examinations available for nurses in gerontology, at the associate degree/diploma level or baccalaureate level for registered nurses (RNs), and at the advanced practice level for clinical nurse specialists in gerontological nursing or **gerontological nurse** practitioners.⁷

Although elderly patients make up 90% of long-term care populations and 80% of home care visits, most of these individuals are not cared for by nurses with these specialty credentials.^{8,9} In many environments, the majority of care is provided or supervised by licensed vocational nurses (LVNs) or **certified nurse's assistants**, also called nurse's aides. In long-term care environments, the majority of staff is made up of nurse's aides, who provide the day-to-day, hands-on care required by facility residents. Supervision of this care is usually provided by LVNs in the role of charge nurse. RNs usually serve in administrator roles, such as director of nursing, in these environments. Long-term care

regulations require facilities to have at least one full-time RN, but this requirement must often be waived, particularly in rural areas, due to lack of available workforce. Home health agencies or health clinics associated with **assisted living facilities** (ALFs) or senior housing centers are staffed in a similar way.

Pharmacists

Pharmacists provide care to older patients in a variety of settings, and pharmacists in the community setting have perhaps the most frequent opportunities for interactions with older patients. However, one of the most prevalent areas of practice where the focus is geriatric pharmacotherapy is in **long-term care facilities** (LTCFs). Every licensed LTCF must retain the services of a pharmacist to provide drug regimen review and consultation on other services related to drug acquisition, labeling, storage, security, administration, documentation, and destruction. The primary responsibility of the pharmacist is to identify medication-related problems and to formulate interventions to prevent or resolve them. Pharmacists often provide similar services in ALFs, home-based programs, hospices, and other specialized care settings that focus on the older individual. In the outpatient setting, such as a clinic, pharmacists may see patients in conjunction with a patient's primary care physician. Specific credentials in geriatrics are not required to practice in long-term care or other areas of geriatric practice; however, there are options for obtaining additional training or credentials in this area. Geriatric specialty residencies are available at many institutions, and the Commission for Certification in Geriatric Pharmacy has been offering credentials as a **certified geriatric pharmacist** since 1997.¹⁰ This certification is voluntary but has become increasingly popular among individuals with a focus on geriatric practice. The process involves an evaluation of education and experience in the principles of geriatric pharmacotherapy and in the provision of pharmaceutical care to the elderly as well as an examination, and periodic recertification is required. The American Society of Consultant Pharmacists provides an educational program that can prepare pharmacists for this exam.

Other Health Professionals

Specialized care to address functional deficits associated with morbidity and functional decline is often provided by physical therapists, occupational therapists, and speech therapists. Their services are part of the skilled care that is provided to individuals during or after hospitalization, but it can also be provided as outpatient or home-based care. Physical therapists focus on motor function, range of motion, balance, strength, and endurance. Occupational therapists differ from physical therapists, focusing on the performance of activities of daily living (ADLs). Speech therapists not only address language/communication difficulties but also swallowing function and cognitive skills. Other professionals who provide care to older adults include dietitians, social workers, recreational therapists, and psychologists.

Interprofessional Teams

One of the most comprehensive forms of care for an older patient is by an **interprofessional team** of health professionals. Skilled nursing facilities (SNFs), specialized clinics, hospital systems, or academic health sciences centers may offer the services of a geriatric assessment team. Due to the interprofessional nature of such a team, patients can undergo comprehensive examination, screening, medication review, and other evaluations. Such teams may either serve as the patient's primary source of healthcare follow-up or as consultants providing recommendations from an expert group to the patient's primary physician. The core disciplines in such a team usually include representatives from medicine, nursing, pharmacy, physical therapy, occupational therapy, speech therapy, and social services. Many teams also include dietitians, psychologists, recreational therapists, clergy, or others, based on the patient's needs. Depending on the institution's resources, these teams may also have access to consultation or participation by specialists such as neurologists, cardiologists, psychiatrists, ophthalmologists, podiatrists, or dentists.

Demographics of the Healthcare Workforce

The rapid growth in the geriatric population has been well described. In 2002, one in eight individuals were older than age 65, and this ratio is expected to increase to one in five by the year 2030.¹¹ Unfortunately, the growth of the workforce that is trained to care for these individuals has not been commensurate with this population's needs.

As of 2011, the number of American Geriatrics Society Board-certified geriatricians was reported as 7,162, a reduction from previous years.¹² This is less than 25% of the number estimated to be needed to meet the healthcare needs of today's population of elderly patients. Although it is understood that a significant amount of care for older patients is provided by physicians who do not seek formal Board certification in this area, since that time there has not been workforce growth commensurate with population growth. Less than 3% of medical students choose to enroll in elective geriatrics coursework.¹³ Of the 468 first-year fellowship training slots open in 2006–2007, only 54% were filled. There has also been a decline in the number of U.S. medical school graduates entering geriatric fellowships; only about 0.5%. Most physicians entering geriatric fellowships are from medical schools outside the United States; 184 of the 287 physicians entering fellowships in 2007 were international graduates.¹³ Therefore, most elderly patients do not receive their primary physician care from an individual with these credentials.

In 2003, newly licensed nurses reported that older patients made up 62.5% of their patients.¹⁴ However, <1% of RNs and <3% of advance practice nurses are certified in geriatric nursing.¹⁵ There is also a shortage of nursing faculty, particularly in geriatric nursing, with 25% of nursing programs lacking a gerontological faculty member.¹⁶ In addition to the low numbers of nurses credentialed in geriatrics, there is a shortage of nurses in the healthcare workforce

in general. Nurses and nurses' aides make up the front line of care for the huge population of older patients in almost every healthcare venue described in this chapter, and they are in a position to either provide or oversee a significant proportion of the day-to-day, hands-on care that is delivered. Shortages in the workforce and in the training capacity, particularly in geriatrics, represent one of the most critical areas of weakness in the current health system.¹⁷ By 2020, the RN workforce will probably be 20% below that required to meet population needs.

It has been estimated that between 70% and 80% of direct hands-on care of older adults is provided by nurse's aides, home health aides, and personal care assistants. Training requirements for these direct-care workers differ from state to state. Although there is a federal minimum of 75 hours, this has not been adjusted in over 20 years, and 20 states stipulate only the minimum requirement. The Institute of Medicine (IOM) suggests the minimum requirement be increased to at least 120 hours.¹⁷

Pharmacists' participation in senior care is a growing area of specialty focus. As with other health disciplines, most pharmacists will encounter older patients in their practice regardless of their practice setting, and there are no specialty credentials that are required. Less than half of pharmacy schools have a distinct course in geriatrics.^{13,17} Accreditation requirements mandate instruction in special populations, but specific criteria for geriatrics curricula are not delineated.¹⁸ However, given the significant utilization of drug therapy by the older population and the rising concern with adverse drug outcomes, there is a growing need for pharmacists to serve as patient advocates in this area. Currently, pharmacists who have completed specialty residency training in geriatrics are in short supply, but those who have obtained certification via the Commission for Certification in Geriatric Pharmacy examination are increasing in number.⁹

KEY POINT: One of the greatest challenges in providing tailored care to elderly patients is the lack of healthcare professionals who are specially trained in geriatrics.

Where Is Care Provided?

The continuum of care for elderly populations includes both chronic and acute care. Chronic care not only includes the day-to-day management of chronic disease states but also may involve the maintenance of ADLs or provision of cognitive supervision. These services can be provided in the home, in ALFs or other specialized senior housing, or in LTCFs.

With respect to acute care, elderly patients make up over 50% of hospitalized populations. Compared to populations under age 65, older patients have longer average lengths of stay, and have special needs in the emergency room or in the hospital.⁹ They are particularly vulnerable to adverse outcomes such as delirium or residual disability after acute illness. Rehabilitation services, such as in an SNF, are often required to assist patients in regaining strength and function before being discharged back to the living environment where they receive chronic care. As such, elderly patients are consumers of multiple venues of care.

Home-Based Care

Most individuals prefer to live in their own home for as long as possible; however, declining health can result in disability that makes this difficult or unsafe. It may be possible to continue living in a private home in the community setting provided the proper support is available from either formal or **informal caregivers** or services.

Informal support is most often provided by a family member, usually a spouse or adult child, but a variety of services for hire can assist an individual with day-to-day needs. This might include assistance with housekeeping, errands, transportation, meal preparation,

personal companionship, or other services for which no healthcare professional credentials are required. Individuals with more significant health needs may require assistance with personal care such as bathing, dressing, grooming, toileting, or ambulating. Assistance with medication management is also common. Although individuals often arrange services of this nature with people who are not health professionals, the front line of home-based care is made up of home health agencies. Nurse's aides may provide day-to-day personal care, but home health nurses are required to perform patient assessments and treatments, such as intravenous therapy or tube or ostomy care. One of the biggest challenges to the provision of care by these agencies is the ability to achieve adequate staffing of trained caregivers, especially in rural areas, due to workforce shortages. In some instances, the Area Administration on Aging can be a resource at the local and county level for locating available services.¹⁹

Physician visits in the home are possible in some areas, but these services are not common. Typically, transportation must still be arranged to access physician care in an office or clinic. An alternative to this may be home visits by advance practice nurses, such as nurse practitioners, who can extend the service range of the physician and can change medication therapy orders.

In this setting, access to both prescription and over-the-counter (OTC) medications is generally through community pharmacies or mail-order pharmacies. Home health agencies generally do not include consultant pharmacist services to provide drug regimen review, medication therapy interventions, or collaborative drug therapy management services; however, entrepreneurial pharmacists have created unique practices of this nature in some outpatient settings.

Physical therapy, occupational therapy, speech therapy, or clinical laboratory services can also be arranged in the home setting.

Adjuncts and Alternatives to Home-Based Care

When an individual's lifelong home is not practical, options such as senior housing or life care communities present alternatives to placement in an institutional setting. Senior housing is often just a high-rise or campus of apartments, condominiums, or garden homes that cater to the needs of older individuals. Such settings may offer housekeeping, laundry services, security, maintenance, fitness centers, and social activities. Some may also provide transportation services or even have an on-site clinic with access to nursing staff. Continuous care retirement communities, sometimes called life care communities, are based on the concept of "aging in place." They provide a continuum of private apartments, assisted living apartments, skilled nursing units, and long-term care units all in one campus-style location. Individuals buy a residence in the community but also pay a monthly fee. For this investment, a community resident can move between any level of care as needed, based on health status, while still paying the same or similar monthly fee regardless of the extent of daily care required.²⁰

For individuals who cannot be left alone but do not have a 24-hour caregiver, or for those whose primary caregivers/family members must work outside the home, adult day centers can provide a solution that allows individuals to continue to live in their own home while providing socialization, supervision, or assistance during the day. Daytime meals, assistance with daily activities, or medication administration is often available.

A PACE (Program of All-Inclusive Care for the Elderly) program is an optional benefit under Medicare or Medicaid for individuals frail enough to be eligible for long-term care. In states that offer this benefit, the program bundles services in a comprehensive package that can be delivered at home or in adult day centers. As of 2013, there were 98 PACE programs in 31 states.²¹ PACE medical teams usually include primary care physicians; nurses; physical, occupational,

and recreational therapists; social workers; personal care attendants; dietitians; and drivers. The services must include all Medicare and Medicaid services provided by that state, but typical services may include personal care; respite care; physical, occupational, speech, or recreational therapy; meal provision; social work; medication ordering; and coordination of dental, optometry, podiatry, hospital, and long-term care. Enrollees pay a premium each month, and PACE receives a fixed monthly reimbursement from Medicare and Medicaid.²²

Assisted Living Facilities

Individuals who require additional assistance with daily activities but who do not require the 24-hour care of a LTCF may be candidates for an ALF. These environments are similar to senior housing but usually provide more structured services. In addition to those previously described, these settings usually provide all meals, on-site nursing services, medication administration assistance, and assistance with some ADLs. Although residents of an ALF may require some assistance with daily activities, they must be able to remain safely unsupervised within their apartment and have at least some mobility (e.g., transferring from bed to chair to commode). Residents may require adaptive equipment or assistive devices, but they must be able to accomplish these tasks under their own power.

Whereas an ALF provides more formal services, it is not regulated in the same way as long-term care. The LTCF requirements for frequency of physician follow-up, drug regimen review by a pharmacist, or specific patient assessment and monitoring by nursing staff are not mandated in the ALF setting at the federal level. This setting is regulated at the state level, so requirements may be more or less stringent based on location.

Long-Term Care Facilities

Individuals requiring the highest level of care may require long-term care placement. Long-term care may also be the only option for persons who do not require the highest level of care but for

whom proper caregiving resources in their own home are not available or affordable. These environments provide 24-hour care, and strict state regulations under the Department of Health and Human Services govern the day-to-day operations of licensed facilities. Facilities that receive reimbursement from Medicaid or Medicare must also comply with federal regulations under the Centers for Medicare & Medicaid Services. These regulations govern staffing requirements, the frequency of physician follow-up, and the frequency and scope of consultant pharmacist activities. The facility operations manual and interpretive guidelines provide specific requirements for medication documentation, administration, monitoring, storage, labeling, and security.

Medicaid is the largest payer for long-term care, and facilities that receive reimbursement under Medicaid must dedicate a proportion of their facility beds to the care of individuals who qualify for Medicaid based on income. Facility residents must expend available resources, in a process commonly termed *spending down*, until they qualify for Medicaid.

Generally, SNFs receive reimbursement from Medicare. Medicare does not pay for long-term residential care but will provide reimbursement for short-term rehabilitation or other specialized care as a transitional step after hospital discharge. Medicare requirements for regular monitoring of patient progress and updating of the plan of care often presents one of the most reliable mechanisms for the interprofessional team to interact. Although pharmacists are not providers under Medicare, the consultant pharmacist to a skilled facility or unit will often participate in these team deliberations as part of a service contract with the facility.

An alternative to the traditional long-term care setting is a Green House.²³ This is a small facility that is home to up to 10 residents, with a 24-hour universal worker, called a *shabaz*, who attends to daily needs. The concept is based on the Eden Alternative, in which the environment is home-like, centered around the individual, and is intended to allow “aging in place” with a small

group of residents and staff with whom close relationships can be formed. The Green House project began in 2005, and in just the past few years has grown from 20 Green Houses in 16 states to hundreds of Green Houses either open or in development in over 30 states.²⁴ Depending on the location, the facilities vary in whether they are licensed as long-term care facilities or SNFs and, therefore, whether reimbursement is available from Medicaid or Medicare. Mechanisms for arranging formal healthcare services and regulations mandating the frequency of follow-up will also depend on licensure status.

Long-Term Acute Care, Emergency Departments, and Hospital Environments

One type of hospital environment often associated with older patients is long-term acute care, although this environment is not exclusive to patients over age 65 years. This type of hospital is associated with longer average lengths of stay than a traditional hospital environment (at least 25 days) and provides treatment for chronic diseases to medically complex patients. Some of the typical needs in this environment include ventilator weaning, wound care, post-stroke care, long-term infectious disease management, or other care that is more medically complex than that provided in a nursing home environment.²⁵

In the acute care environment, some hospitals have specialized Acute Care for Elders (ACE) units that are dedicated to special geriatric needs. The care in these environments includes a prepared environment, early rehabilitation, frequent medical review, and early discharge planning in a patient-centered and function-focused approach designed to prevent hospital-associated functional decline.^{26,27} Meta-analyses of studies evaluating outcomes of ACE unit care indicate that hospitals employing these components of care are associated with fewer falls, less delirium and functional decline, shorter hospital stay, and lower costs.²⁷

In most acute-care environments, elderly patients are cared for as part of the general adult population, and the majority of hospitals and

emergency departments do not have specialized units or care teams for geriatric patients. Therefore, all staff members need to be aware of the special needs of frail patients in order to provide optimal care and avoid iatrogenic problems. This includes, in part, an understanding of age-related changes in physiology that affect risk of disease, cause atypical clinical presentation, and alter medication response. Subsequent chapters will describe the principles of geriatric assessment, age-related changes in pharmacokinetics or dynamics, and an organ-system approach to pathophysiology and pharmaceutical care.

It is also worth mentioning the specific aspects of the care environment that are not always conducive to an elderly patient's needs. Consider the care that is taken to prevent loss of a patient's personal effects on admission to the emergency department. Personal clothing, glasses, hearing aids, dentures, and other belongings are usually removed, bagged, and labeled. Patients are provided with a hospital garment. Although in most cases a patient may not need to be physically restrained, the placement of intravenous lines or catheters essentially restrict the patient to the bed. It is isolating and confusing for most individuals to feel, in addition to the effects of the illness or injury that caused the admission, being cold, and unable to see, hear, speak, or ambulate well. These processes are expedient and perhaps necessary given the specific circumstance, but consider the coping abilities of an individual in this circumstance with an underlying cognitive impairment, or in a patient who is at risk for mental status change or delirium due to his or her illness. If agitation results, either in the emergency department or in the hospital unit, elderly hospitalized patients are vulnerable to the prescribing of chemical restraints, an intervention which may be crucial for the delivery of safe care in cases where the patient presents a danger to self or others but which can be problematic if not used judiciously.

Elderly patients are also particularly vulnerable to the effects of immobility associated with hospitalization. Thromboembolism and infection are two of the most significant adverse outcomes

thought to be related to immobility, but pressure ulcers, worsening pain, constipation, increased vulnerability to orthostasis, deconditioning and muscle weakness, functional decline, and falls are common. Medication therapy can directly or indirectly exacerbate the risk of each of these. Finally, elderly patients are vulnerable to iatrogenic harm caused by preventable adverse drug events.

The Continuum of Care

Challenges for Seniors Moving from One Care Venue to Another

The three most significant barriers to the assurance of good care are availability, cost, and coordination. The demographics of the geriatric population and the lack of healthcare workforce have already been discussed. The availability of assisted living apartments or long-term care beds is also inadequate to meet population demands. The costs associated with specialized services can also be prohibitive for individuals on a fixed income, despite health benefits, especially if savings are depleted by costs associated with chronic disease care. The cost of long-term care can vary significantly from state to state, but in 2010 the average cost was estimated to be \$205 per day (\$6,235 per month) for a semi-private room and \$229 per day (\$6,965 per month) for a private room. The cost for a one-bedroom unit in an ALF environment was \$3,293 per month. In the home, costs associated with a home health aide were \$21 per hour, and \$67 per day for adult day healthcare center services. In addition to cost, access to geriatrics-trained caregivers can be difficult.²⁸

Medicare benefits provide coverage for hospital or physician office visits and up to 100 days (per illness) of skilled nursing care after hospitalization under Parts A and B, and a prescription drug benefit under Part D, but Medicare does not pay for assisted living or long-term care. Medicaid does provide long-term care benefits to individuals who qualify based on income, but the biggest challenge is the availability of Medicaid beds in many LTCFs,

where there may be extensive waiting lists. Unfortunately, for this reason, selecting a long-term care environment often becomes less a matter of choice than of the first-available spot. In the home-based care environment, there are a variety of mechanisms for funding various services, but these are inconsistent from state to state in terms of who is eligible and what services are covered.

In addition to availability and cost considerations, another risk for elderly patients is moving from one care venue to another. Pharmacists are familiar with the concept of polypharmacy. The premise is that the more medications on the regimen, the more complex the pharmacological reactions between compounds and disease states, increasing the vulnerability to cost, medication error, interactions, adverse reactions, morbidity, or even mortality. A similar concept in geriatric healthcare is *polyvenueism*. The more an older patient, who may already be frail due to multiple comorbidities or functional deficits, is shuttled between healthcare settings and healthcare providers, the higher the risk of miscommunication, gaps in information, medical or medication errors, and adverse outcomes.

Current standards require healthcare institutions to employ safe medical practices, and most employ some method of medication reconciliation on admission or discharge. However, there is no requirement that each distinct environment employ uniform methods of carrying this out. Each healthcare environment will employ its own system of documentation and clinical records maintenance. Therefore, the same safeguards that exist within a healthcare environment may not exist between healthcare environments. The ability to optimize transitions of care has become a major factor affecting reimbursement for hospital systems.

KEY POINT: Older patients are consumers of multiple care venues, and there is not always dependable communication between these venues.

After returning to an outpatient environment, geriatric patients face challenges in receiving streamlined care. Coordinating the care provided by all of the care vendors is challenging. From physicians' offices (including primary care physicians, their mid-level practitioners, and any number of specialists), to home visits by nurses, therapists, or other caretakers, to the community pharmacy, individuals not only receive care from multiple venues, but the documentation of that care is maintained in separate records sources. If a home health agency is involved, it may be possible to compile most relevant health information into a comprehensive medical record, as medical history data, treatment orders, medication orders, therapy orders, assessment data, and laboratory monitoring are generally ordered or at least coordinated through the same agency. By contrast, an independent individual who coordinates his or her own healthcare and receives services in an a la carte fashion would be the sole source of complete healthcare information, regardless of what data are maintained by each health professional involved in his or her care. It must be recognized that in either of the above scenarios, pharmacists are still "external vendors," as home health agencies do not have their own pharmacies and could not mandate use of a particular pharmacy even if they did.

A patient will have the freedom of choice in pharmacy services, and he or she may use more than one pharmacy. Therefore, it is important to remember that the medication lists maintained by other health professionals or by a home health agency are merely reflective of the current intent for medication orders, and specific (and repeated) "brown bag" medication and adherence review is often necessary to ascertain whether such medication list accurately mirrors what the patient is actually filling and taking. In such a review, the pharmacist would collect all available pill bottles, containers of OTC products or supplements, and other materials related to medication taking or medication monitoring that the patient could provide and compile a complete medication history along with an assessment of patient adherence, level of understanding or

health literacy, and assessment of medication outcomes.

Access to Medication/Pharmacy Services

An individual's access to prescription and OTC medications is usually through community or mail-order pharmacies throughout most of the continuum of care. Therefore, it is the community pharmacist who has perhaps the greatest opportunity for interaction with geriatric patients. In home-based care, senior housing, and assisted living, individuals will retain their choice of pharmacy provider(s). This is also true in long-term care. Although LTCFs with skilled nursing units will contract with a specific pharmacy vendor to provide medications under Medicare Part A, individuals receiving residential care may still choose from any pharmacy provider that will supply medications to a LTCF. The major difference, of course, between these settings has more to do with who controls medication acquisition, administration, and monitoring: the patient or a caregiver.

Independent, community-dwelling individuals are responsible for their own medication purchases, refills, adherence, technique, self-monitoring, and self-reporting of outcome. The primary means of identifying efficacy outcomes or adverse drug reactions is through patient self-report. This means that there must be a mechanism for one or more health professionals to interact with patients on a regular basis to perform specific evaluations of medication therapy. The importance of medication review is widely accepted, and most health professionals perform this to some degree during their interactions with all patients. However, it could be argued that there are barriers to the optimal performance of this task, and that recognizing and overcoming these barriers could help with adverse drug outcomes in elderly populations.

For instance, a thorough medication review should have the appropriate time dedicated to evaluating all indications, drugs, doses, intervals, durations, interactions, contraindications,

adverse effects, efficacy endpoints, cost, and adherence. This activity also must include all OTC products or supplements. Time should also be spent in ensuring that the patient understands the purpose of each medication, what to expect and how to monitor, and how to administer, especially for those medications requiring special technique. This often requires more time than can be afforded during a physician office visit or a home care nurse visit. In addition, the frequency of patient encounters can vary. Some patients may see their doctor once a year or less, and in such situations the data from even a very thorough medication review can quickly become outdated.

Pharmacists can provide medication review and can bring a high level of expertise in drug therapy to this task, but there are also barriers to optimal review for these health professionals as well. In the community setting, pharmacists may have limited data. Pharmacy databases are limited to the history of prescriptions filled or refilled within that pharmacy or pharmacy chain, or at least to those prescriptions filled under that individual's prescription drug plan. Also, these databases do not contain full medical history information. Although history taking or basic patient assessment by the pharmacist can elicit some pertinent information related to indications for each medication and efficacy or side effect outcomes, these activities are often hindered by time constraints or the reliability of patient report.

In settings where medication assistance or medication administration is provided by a nurse or nurse's aide, patients may or may not be aware of what medications they take or why or how they should be administered and are vulnerable to medication error by the health professional. In these settings, such as in long-term care, a consultant pharmacist has access to the medical record and a more thorough evaluation of drug therapy outcomes may be possible, but such individuals often do not have the ability to intervene prospectively, at the time of prescription processing. A consultant pharmacist can periodically oversee a staff member passing medications and make recommendations about

proper administration but is usually not going to be able to do so before the first dose is administered. Periodic drug regimen review can also identify medication-related problems, but this is usually limited to the identification of problems associated with medications for which administration has already commenced, and in some cases, such as with antibiotics, the course of medication therapy may be initiated and completed in between chart reviews, making the ability to intervene in the case of inappropriate drug, dose, interval, route, duration, or monitoring very difficult.

By contrast, inpatient settings usually have on-site pharmacies that supply medications to patients during the time they are on the health-care facility's service. In these environments, the same department that has the prescription processing responsibility also has the access to the complete medical record, perhaps making drug therapy intervention for medication-related problems easier for all patients in that environment, not just older patients. Increasingly, pharmacy departments are staffed to provide pharmacist participation in both the pharmacy operations and medical team deliberations in the hospital units, but this is contingent on whether an institution recognizes their importance and provides adequate allowances for budget and time to accommodate these services.

Two types of pharmacy services are available in the long-term care setting. Long-term care pharmacies provide prescription processing, unit-dose packing, and delivery of products to LTCFs and skilled facilities, or LTCFs with skilled units can also contract with such pharmacies to provide medications to their residents under Medicare Part A. However, LTCFs cannot mandate the choice of pharmacy to residential-stay individuals, where choice of pharmacy vendor, much like the choice of personal physician, is a resident's right. That means that while a long-term care pharmacy may provide medications to all Part A recipients, it may not be the pharmacy vendor for all facility residents.

The other type of pharmacy service in long-term care is consultant pharmacy, and in this setting this type of service is mandated by state and federal regulation.²⁹ Consultant pharmacists must perform a drug regimen review for every resident of a LTCF every 30 days and submit recommendations about drug therapy problems to the director of nursing or the medical director. These recommendations do not have to be accepted and implemented; however, they do have to be acted on, meaning that a recommendation or request must be answered with either an "agree" or "disagree," and a rationale should be provided if the prescriber feels that implementing the change is not appropriate. Consultants will also advise the facility about appropriate procedures for medication ordering, labeling, storage, security (particularly for controlled substances), administration, monitoring, and record keeping. Therefore, in addition to review of the medical records, consultants will periodically audit these processes by inspecting medication rooms and medication carts, observing the nursing staff pass medications, implementing controlled substance inventory counts, and reconciling and destroying expired or discontinued medications. Consultant pharmacists also often participate in facility oversight activities, such as medical director's meetings or quality assurance monitoring.

Prescription processing services and drug costs are reimbursed via direct consumer payment or through prescription drug plans, including Medicare Part D, and medication regimen review and patient counseling is an expected part of this. However, based on the above discussion it is clear that additional pharmaceutical care is often necessary beyond this, in the home, in the clinic, or within the interprofessional team. Such services are not formally reimbursed by Medicare, Medicaid, or most third-party insurance plans. Most pharmacist services of this nature are provided on a fee-for-service basis through independently negotiated contracts between the pharmacist (or pharmacy) and the institution. Because long-term care is mandated to retain the services of

a consultant pharmacist, these institutions will set aside a portion of their budgets for the provision of this service. In ALFs or other care venues, contracting for pharmacist services is voluntary in most states. In light of the significant challenges associated with adverse drug outcomes in the geriatric population, it is important to critically evaluate the potential cost savings of additional pharmaceutical care interventions in the various healthcare environments so as to determine how to design, provide, and budget for services of this nature.

Summary of Pharmacy Services

Whether the site of practice is the community pharmacy, the long-term care pharmacy, a hospital, a clinic, an interprofessional team, or a consultant practice, the pharmacist provides vital input and expertise in a few key areas:

- Drug regimen review and identification of medication-related problems
- Drug therapy interventions to prevent or resolve medication-related problems
- Assessment of medication history or medication administration
- Assurance of continued drug therapy monitoring for safety and efficacy
- Advice about proper storage, handling, and disposal of drug products
- Drug information and education

Pharmacist Contributions to the Healthcare Team

There is a long way to go to improve the quality chasm described by the IOM in our current healthcare system.²¹ Older patients, especially those with complex medical histories, are vulnerable to the fragmentation of care that often results from healthcare that is delivered across multiple venues by multiple individuals with varying levels of geriatric expertise. The IOM proposes the ability to work in interdisciplinary teams as one of five core competencies essential to meet the needs of the 21st century healthcare system.³⁰ The IOM states that “all health professionals

should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics,”³⁰ but the specific role of pharmacists in this team is currently being defined. There is a compelling need for pharmacists with geriatrics training to be a part of the emerging landscape of team care. However, the hope for reforms tomorrow does not help the patient seen in practice today. At this time, whether a formal team exists or not, there is no substitute for the health professional who is knowledgeable about where the current system is broken to recognize how his or her patients are likely to be vulnerable and to advocate or intervene on their behalf. In addition to understanding the age-related changes in physiology that affect pharmacokinetics, pharmacodynamics, and quality of drug outcomes, today’s pharmacists must be familiar with the logistical barriers to pharmaceutical care such as polyvenuism; inconsistent, incomplete, or out-of-date medical records data; and asynchronous communication with other health professionals. Skill sets included not only knowledge of pathophysiology and drug therapy, but the ability to audit, investigate, reconcile, or verify patient history or medication data and to facilitate communication, education, and recommendations to patients and their caregivers about drug therapy concerns.

KEY POINT: Health professionals who understand the potential areas of vulnerability for older patients in the healthcare system are in a better position to advocate for their patients.

CAREGIVER BURDEN

Who Is a Caregiver?

A caregiver is an individual who assists with or performs functions for another who cannot perform tasks independently. These tasks could be anything from assistance with home

maintenance, meal preparation, transportation, or finances, all the way to personal care, such as personal hygiene/grooming, dressing, eating, or ambulating. Based on such a definition, almost all of us may find ourselves in the role of caregiver in some way during our lives. In healthcare, the definition of a caregiver is often divided into formal and informal categories. Formal caregivers are individuals who provide their services professionally, for a fee. Nurses and nurse's aides in the long-term care, assisted living, or home healthcare industries usually come to mind when most people think of this group of caregivers, and it is often assumed that formal caregivers have training as healthcare professionals. However, professional caregivers are often hired in the role of sitter or personal companion, and there is no specific training requirement to fulfill such a role. Informal caregiving is more often taken on by family members, and in some instances by a friend or volunteer. Whereas the American Red Cross can serve as a resource to provide basic training for informal caregivers, this is voluntary and based on availability. Informal caregivers are not paid for their time and must balance caregiving responsibilities with other work or family commitments.³¹ In fact, the majority of adults who receive long-term care at home receive almost all of their care from unpaid family and friends.³²

Caregiver and Care-Recipient Characteristics

It is estimated that 28.5% of the U.S. population over the age of 18 (approximately 65.7 million caregivers in 31.2% of U.S. households) serves as a caregiver in some capacity for relatives or friends.³² The majority of caregivers provide care to adult recipients, with 70% caring for an individual over age 50, and the average age of the care recipient has increased in the last 5 years from 66.5 to 69.3. One third of caregivers provide care to two or more people. Sixty-six percent of caregivers are female, of an average age of 48, providing an average of 20 hours or more per week in the caregiver role. One in four of these caregivers reports that the person he or she

cares for has Alzheimer disease or other cognitive impairment, and the number of care recipients reported as requiring prescription medications has increased to 93%.³²

What Is Caregiver Burden?

Caregiver burden is the caregiver's appraisal of the balance between care demands, resources, and the quality of the caregiver/care-recipient relationship and may be a better predictor of the use of formal healthcare services than measures of the care recipient's mental or physical health or functional abilities.³³ The two types of burden are those that affect personal decisions or activities, and those that affect the relationship between the caregiver and the care-recipient. There are also several levels of burden based on the intensity of caregiving activities required. These levels range from Level 1, where caregivers perform no help with ADLs and spend only a few hours per week in caregiving activities, up to Level 5, where caregivers assist with at least two ADLs and provide care more than 40 hours per week.

Caregiver burden has a significant impact on both the physical and emotional health of the individual providing care. After controlling for age, gender, education, and other factors, there is a relationship between the level of care provided and the impact caregiving has on the caregivers' perceived health. Higher caregiver burden levels also correlate with higher rates of unaddressed patient needs.

There has also been a *widower effect*, described as a consequence of caregiver burden. A large study of married couples demonstrated the effect of hospitalization or death of one spouse on the health of another. After an individual is hospitalized, his or her spouse's risk of death increases and remains elevated for up to 2 years, with the greatest risk occurring within 30 days of the partner's hospitalization or death. During this initial 30 days, hospitalization of a spouse confers just as much risk of dying as the death of a spouse.³⁴

Measuring Caregiver Burden

One of the most common instruments to quantify caregiver burden is the Zarit Index. This instrument evaluates strain by assessing time to self, feelings of stress or anger, strained relations with others, lack of privacy, effects on personal health, impedance on personal life, and loss of control or choice. It also assesses whether caregivers feel guilt over not doing enough, or not knowing how best to provide care.³⁵

Other instruments include the Caregiver Strain Index, Caregiver Burden Inventory, Caregiver's Burden Scale in End-of-Life Care, the Screen for Caregiver Burden, and the Caregiver Activity Survey.³⁶⁻⁴⁰ They vary in their assessment of time; behavioral, physical, social, and emotional factors; as well as in the specific population of caregivers/care recipients tested. There are a number of ways these tools are useful in quantifying caregiver burden. First, a tool that allows recognition of caregivers at risk for poor outcomes as a result of significant burden can facilitate coordination of resources. In addition, assessments of caregiver burden have been employed in clinical trials evaluating the efficacy of interventions for frail elderly patients. For instance, the Resource Utilization in Dementia scale was included among the battery of tests administered in the evaluation of memantine for Alzheimer disease.⁴¹ Finally, the ability to accurately quantify caregiver burden may have implications for public policy, especially as it relates to funding for elder care services. This is perhaps the most challenging aspect of caregiver burden assessment. Even scales that evaluate cost of care via estimates of time lost from wage earning employment or value of informal services provided do not completely quantify the total cost associated with informal care. This is a critical area that warrants further research due to the significant need to reduce the strain associated with informal caregiving.

Caregiver Resources and Strategies to Alleviate Caregiver Burden

Of the resources currently available to caregivers, most home and community-based

services programs are administered via State Units on Aging, with Area Agencies on Aging being the most common.¹⁹ State programs use a variety of methods to track healthcare expenditures for the various services provided; therefore, no uniform method exists to assess costs nationwide. In general, funding for state programs comes from the National Family Caregiver Support Program, Medicaid waivers, the state's general funds, and individual contributions from recipients.

The most common service provided, available in all 50 states, is respite to family members.⁴² However, there is significant variability in the scope of services available from state to state. Some of the most common services available include in-home respite, adult day services, or overnight respite care in a facility.³³ Differing eligibility requirements, service complexity, and fragmentation of services (even within a single state) have been cited as the most significant barriers to coordinating caregiver support. In addition, it is difficult to pinpoint how well state programs meet the needs of the populations they serve. Those programs that employ formal assessment typically direct the evaluation at the care recipient, but fewer than half of states report assessing needs of family caregivers.⁴²

KEY POINT: A significant amount of the care for older individuals is provided by informal caregivers. Although resources are available to informal caregivers, they are not uniform across the country, and there is not always a reliable mechanism for coordination or communication between formal and informal care.

Caregivers are essential keys to coordinating seamless care for frail patients. They are gatekeepers of information, coordinators of schedules, supervisors of treatment regimens, and often the voice of the patient. When there are gaps in documentation, they often know the history that is not found in the clinical record.

When the clinician is struggling to determine whether a clinical presentation represents a significant change from a patient's baseline status, caregivers know the day-to-day norm. They can provide the personal details that remind us their loved one is an individual and not just a patient case. It is a position of power and vulnerability at the same time, as the caregivers

themselves are vulnerable to stress, fatigue, and poor health outcomes. Health professionals need to seek their input when evaluating a frail patient and designing a care plan, not only to ensure that the patient's needs are met, but to do so in a way that is appropriate based on the caregiver's abilities and needs.

CASE 1: USE OF A SUBGROUP PERSPECTIVE TO APPROACH LITERATURE

Setting:

Outpatient geriatric assessment clinic.

Subjective:

A 95-year-old white female, ES, is brought to a clinic by a family caregiver for a routine visit.

Past Medical History:

Hyperlipidemia, history of TIA, mild Alzheimer disease, osteoarthritis.

Medications:

Donepezil 10 mg hs, aspirin 81 mg daily, acetaminophen 325 mg two tablets four times daily, multivitamin daily.

Allergies:

No known drug allergies.

Social History:

ES is widowed, lives with daughter in daughter's home.

Family History:

Noncontributory.

Objective:

Physical exam unremarkable, vitals: BP 148/84 mmHg, P 82 BPM, RR 20, T 97.8°F
Lipid panel: TC 154 mg/dL, LDL 102 mg/dL, HDL 42 mg/dL

Assessment:

The medical resident wishes to aggressively treat ES's cholesterol. He cites reduced risk of cardiovascular outcomes, such as stroke, with the attainment of a goal LDL value of <100 per the PROVE IT trial.⁴³ Is this evidence being appropriately applied to this patient?

Plan:

To answer the question posed in this case, it must be determined whether the adult treatment principles should be extrapolated to ES. The PROVE IT⁴³ is a widely cited clinical trial, but does its finding apply to all geriatric patients? The first step in answering this question is to identify whether there is an evidence base of primary literature with a specific focus on subgroups of patients similar to the patient in this case. In any literature identified, the study's objective and design, its inclusion and exclusion criteria, as well as the baseline characteristics of enrolled subjects should be examined to determine how similar they are to the patient. This includes an evaluation of what age strata are represented, whether both sexes are represented, and whether similar characteristics, such as comorbidity levels, living/treatment environments, or functional or cognitive status, are represented. Even if these characteristics are included, it should be evaluated whether they are represented in large enough numbers to allow subgroup analysis. In this particular case, the study focus does not mirror the clinical situation of the patient. In age strata or medical history, the population in the clinical trial cited does not optimally represent the case patient, suggesting that a choice about drug therapy selection or target outcome made for her based on this study is not optimally evidence-based.

Rationale:

The question posed in ES's case is actually less about whether to treat her hyperlipidemia (see Chapter 7), but it does ask whether clinical literature from the general adult population applies to her. Scrutiny of the baseline characteristics and inclusion or exclusion criteria are steps in ascertaining whether the data were derived from a population representative of an individual patient, or if a more tailored literature search is required.

Case Summary:

When the evidence is limited, choices about initiation of drug therapy will often become a judgment call, simply because an evidence-based treatment decision cannot be made for a patient who is not represented in the evidence base. The case of ES illustrates only one disease state for which the clinician must question whether conclusions drawn from a study in the adult treatment realm are the best course of action for this elderly patient.

CASE 2: COORDINATION OF CARE ACROSS MULTIPLE VENUES AND CAREGIVERS

Setting:

Private home of a community-dwelling individual.

Subjective:

An 88-year-old African American man, LH, has just had two new prescriptions for ophthalmic eye drops presented to the pharmacist in a community pharmacy by a neighbor. LH has called on his friend to do this errand for him because he cannot drive because of poor vision. The friend declines medication counseling by the pharmacist stating “these aren’t for me anyway” and reports that LH has a home health nurse that visits each week and can help him.

Past Medical History:

Hypertension, hyperlipidemia, history of myocardial infarction 2003, and glaucoma.

Medications:

Enalapril 10 mg twice daily, metoprolol 50 mg twice daily, pravastatin 40 mg at bedtime, aspirin 162 mg daily, timolol 0.25% solution, 1 drop each eye twice daily, latanoprost 0.005% solution, 1 drop each eye at bedtime (eye drops prescribed by ophthalmologist, not primary care physician).

Allergies:

Penicillin.

Social History:

LH lives alone, no close family.

Family History:

Not known.

Objective:

Physical exam not performed; last recorded vitals from a blood pressure check in the pharmacy include BP of 110/60 and pulse of 54 BPM.

Assessment:

LH is receiving both formal and informal assistance from more than one venue or caregiver, and there are multiple ways in which LH is vulnerable to a suboptimal outcome:

1. At the pharmacy: The pharmacist filling the prescription has likely performed a drug regimen review and has offered counsel, but this has been declined.
2. By home health: The home health nurse who visits once weekly would not be able to directly assist with daily administration of the drops or other daily medications.
3. By the prescriber: The prescriptions have been prescribed by an ophthalmologist, not the patient’s regular doctor.

Plan:

To prevent a medication-related problem, LH must be assessed for opportunities to coordinate care. In optimal circumstances, communication would occur not only between the pharmacist and LH or his caregiver but also between the pharmacist and the home health agency and physicians involved. Each health professional has data or information that the others do not. The pharmacist could provide medication counseling to the home health nurse and can provide updated information about the current medication list and refills to the primary care doctor. The

home health nurse can reinforce drug information about administration and self-monitoring to LH, perform weekly vitals assessments, and regularly ascertain medication understanding and enquire about adherence.

Rationale:

1. Coordination of care is necessary because this patient is vulnerable to potentially preventable adverse outcomes. In the pharmacy setting, even if medication counseling had been provided it would have to have been relayed through LH's friend. Although the provision of written prescription information is required, LH's poor vision may hinder the utility of this method of instruction. This is especially problematic due to the nature of the prescriptions that were filled.
2. Ophthalmic drops require specific technique for proper instillation, and the administration of two eye drops requires that adequate time be allowed in between drops, for optimal absorption. Although the systemic effect of an ophthalmologic beta blocker preparation is likely small, LH is already receiving an oral beta blocker and has had blood pressure and heart rate at the lower end of the desired range. Therefore, changes to these parameters should be monitored. The home health nurse will not be able to administer these medications for him but perhaps could provide education and evaluate weekly vitals, especially if there were communication from the pharmacist to alert the nurse why this was needed. In order to do this, there must be a mechanism for the pharmacist to ascertain which home health agency is providing care.
3. With the dispensing of these two new prescriptions, the pharmacist would now have a more up-to-date medication list than would be available to the primary care physician. By contrast, the pharmacist has no direct access to the medical record with a complete medical history, so although the pharmacist likely performed a drug–drug interaction check against the prescription history in the pharmacy database, the completeness of this check may be limited, because the pharmacist may not be aware whether there are other medications that have been prescribed and filled elsewhere. The office of the primary care physician would maintain records about medical history and prescriptions ordered by that doctor but would not be aware of any potential interactions with the new medications from other providers until LH returns to the office and provides a complete medication history, which may not occur until after he experiences a problem.

Case Summary:

Each health professional performs one aspect of the care of LH, but all the parts do not equal a whole unless they are knitted together. Without coordination, LH is vulnerable to subtherapeutic effect of the ophthalmic medications if not administered properly or potential exacerbation of bradycardia if continuous monitoring of vitals is not ensured while on both his antihypertensive regimen and his eye drops. There is no way for each member of the healthcare team to be aware that a potential problem exists unless they are communicating. In traditional practices, the biggest barrier is a lack of a habitual or comfortable mechanism for each caregiver to communicate with one another.

Is the relationship between pharmacist and doctor one that would facilitate notifications about updates or changes or concerns with drug therapy, either by phone or by fax? Does the home health agency maintain contact information for the patient's pharmacy of choice so as to have access to the pharmacist when drug therapy questions arise? If so, is such contact regularly made? Is the workflow in the pharmacy conducive to the performance of pharmaceutical care activities such as telephoning LH and offering verbal counsel, or offering to coordinate counsel with the home health nurse if LH is hard of hearing or would like a hands-on demonstration of medication administration? For each answer of "no" to these questions, there is perhaps a hole in the safety net that is intended to knit LH's care services together.

Clinical Pearls

Hospital Documentation Versus Long-Term Care Facility Documentation

- On transfer between the hospital and long-term care, the hospital's history and physical or discharge summary is often used as the admission history and physical in the LTCF. Regulations allow this, provided the document is authenticated as accurate and current by the resident's physician. However, it may not always be complete. Nursing facility regulations require that all medications, acute or chronic, must have a supporting indication for use, but hospital documentation may often be limited in scope to the primary medical conditions/medications pertinent to the inpatient admission, and the hospital's medication reconciliation may not always include data about medication indication or the rationale behind medication changes. Understanding that it can take up to 6 weeks to observe an adverse outcome resulting from a change in drug therapy made in the hospital, it is likely that many patients have been discharged to another care venue, such as a skilled nursing facility or LTCF, before such a problem is realized. Therefore, decisions about medication continuation/discontinuation or duration of therapy are perhaps some of the most critical at the time of transfer, yet this decision making is often hampered by lack of complete data.

Formulary Management

- Formularies are common strategies to control costs and to standardize medication interventions for various clinical scenarios. These strategies work best in healthcare facilities where (1) there is a single pharmacy vendor, (2) there is one (or very few) third-party payer(s), or (3) prescribers' clinical privileges are bound to the policies and procedures of the institution. The hospital setting is an example where a single formulary may apply, but in most other settings, such as long-term care, there is no single vendor for medical or pharmacy services, so any number of formularies could be dictating choice of medication within the facility's population. Formularies may change with each transition as a patient moves from the hospital to skilled care to long-term care. For consultant pharmacists in long-term care, it is often difficult to know exactly which medications are on which formularies as these transitions occur. Therefore, it may be valuable for the consultant to record contact information for each individual patient's pharmacy vendor. In the event that questions arise about which product to recommend as part of a drug therapy intervention, the consultant could ascertain the appropriate options through that route.

CHAPTER SUMMARY

Based on what we know about the heterogeneity of the geriatric population, it is easy to understand why a healthcare workforce must include a strong group of professionals well-versed in the needs of this population. This introductory chapter has outlined not only the diversity of the geriatric population but also the available workforce, care venues, services, and programs. Subsequent chapters will provide further information regarding the social, financial, physiological, and psychological vulnerabilities of this population, but the pertinent message of this chapter is that a thin and fragmented care and support network fundamentally exacerbates such vulnerabilities. Healthcare professionals who understand the cracks and deficits in our current health system may be in a better position to advocate for their patients. Recognizing different populations of elderly patients and using a subgroup perspective in the approach to the clinical literature allows for clinical decision making that is more tailored. Recognizing the type and availability of healthcare services, including the healthcare professionals who are providing them, can assist with the development of services to better meet the population's needs. On behalf of the geriatric population of today, as well as the future population (of which each of us may one day count ourselves a member), healthcare professionals must rise to meet the challenges described in this text.

SELF-ASSESSMENT QUESTIONS

1. A healthcare diagnostics company has conducted a study of a new home machine that will allow patients who take warfarin to test and monitor their international normalized ratio (INR) at home. The study demonstrated that regular home monitoring reduced the incidence of adverse events related to supratherapeutic INRs. What subgroups of elderly patients may present the greatest concern in applying these data?

- An ALF offers a medication reminder service that entails assistance with the set-up of pill boxes and a daily visit by a nurse's aide who will remind patients to take each dose and assess adherence via pill count. This individual can also take blood pressure and heart rate prior to the administration of any medication, if required. What medications would most likely be administered safely with the use of such a service?
- A 42-year-old woman who works outside the home and has school-aged children has recently taken her mother into her home after hospitalization for hip fracture. Her mother has mild dementia and is currently mobile at a wheelchair level only. She requires supervision and assistance with ADLs, and she is eligible for Medicaid. What resources are most widely available to caregivers in this type of situation?

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