

HEALTH AND PUBLIC POLICY AS IT AFFECTS SENIORS



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Learning Objectives

1. Compose a plan using available resources for elderly patients to gain access to their prescriptions.
2. Argue the advantages and disadvantages of the new Medicare prescription benefit program.
3. Measure the impact of the senior care pharmacist on the use of drugs in the elderly.
4. Analyze the effect of current Food and Drug Administration policies on elderly patients' access to drugs.
5. Classify the different levels of long-term care according to how they meet patient needs.
6. Justify the inclusion of a pharmacist into an interdisciplinary team caring for elderly patients.

Introduction

Growing old successfully is one thing to which everyone aspires. Views of elderly patients are chiefly formed by experiences with family members as they age and most people think of the elderly in a favorable light, remembering their own parents and grandparents. The elderly are thought of as “people like me” because most people anticipate reaching 65 years of age and living healthy, productive lives well into their 80s and 90s. Twenty years ago, 11.2% of the United States population was 65 years of age and older, with 2.4% 80 years of age and older. Those 65 years of age and older has increased to 12.5% in recent years but is projected to dramatically shift during the next 2 decades when the first of the baby boomers reach 65 years of age after 2010. Furthermore, the 85-years-of-age-and-older age group is the fastest growing age group of elders. Therefore, the

expectation to age successfully in terms of life span is likely to be achieved because in the year 2000 the life expectancy for a 65-year-old in the United States was 17 additional years compared to only 12 additional years for an individual of the same age in 1950.

Current Trends in Population Aging

Based on recent trends, modest increases in life expectancy for the elderly are anticipated in the next 20 years. However, there is no direct evidence that a biological limit to human life span exists. Trends in Japan, a country with one of the highest percentages of elderly citizens, show no slowing in the increase of life span for this age group. If there is no biological limit, life expectancy may continue to increase as unforeseen medical advances in preventing and treating major causes of death occur. If life extension is not accompanied by a delay in development of morbidity, a huge burden will be placed on the health care system in the United States.

Mortality and Morbidity Compression

But if the onset of illness can be delayed along with the increasing life span, people will remain productive for many additional years. This scenario may not increase health care costs substantially because disability will be delayed to the extremes of old age. A final possibility is the concept of “compression of morbidity”. In this model, life expectancy increases only slightly until it reaches a hypothesized biologic limit. Concurrently, median onset of morbidity is delayed as better prevention and treatment modalities are

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Abbreviations in this Chapter

ADL	Activities of daily living
ALF	Assisted-living facility
LTC	Long-term care

adopted. The quality of life is improved and the national burden of illness is reduced.

Long-term trends in disability support a delayed onset of morbidity. For example, prevalence of institutionalization in patients older than 65 years of age decreased from 6.8% to 4.2% from 1982 to 1999 and reports of difficulty seeing decreased from 15.3% to 11.6% from 1984 to 1993. If the rate of decline of overall disability continues at 1.5% per year as several studies show, the length of time future elderly patients will spend on average in a chronically impaired state is 3 years compared to 6 years, allowing people to reach old age with a relatively shorter phase of illness and disability.

However, other studies show conflicting results of unchanged rates of blindness, deafness, and the ability to perform basic and instrumental activities of daily living (ADL). No matter which future becomes reality, health care policy must address changes in the nation's elderly. Currently, 33–50% of total health care expenditures are spent on the elderly. Some predict that this percentage will increase as the percentage of the population older than 65 years of age increases. However, there is little correlation between the percentage of gross domestic product spent on health care for the elderly and the percentage of patients in this age group. But absolute expenditures will increase as the number of elderly increase. If the increase in older patients is coupled with a decline in age-specific disability, financial expenditures for health care in the elderly may not pose the national threat currently feared.

Defining Old Age

The wild card in this picture continues to be linked to the definition of old age. Chronological age is the most convenient measure, but there is rarely an exact age where physical appearance, key life events, or social changes converge to make someone fit the definition of “elderly”. The aged are a heterogeneous group, some with economic assets and excellent health and some without either. Excellent or very good health was reported by only 33–36% of those 65 years and older in 1982 compared with 31–42% in 1999. So, for some elderly, increased longevity is an extension of healthy active lives, whereas for others, it is an extension of disability. As baby boomers reach the threshold of being “elderly”, their usual gusto for redefining

society will be the trump card that surprises the other generations.

Because 70% of the decline in physical health is related to modifiable factors, such as smoking, nutrition, physical inactivity, and failure to use preventive services, it can be expected that people who have the means to do so will improve their odds for healthy aging. Even without a systematic approach to reduce health risk and prevent disability, there has been a reduction of morbidity. The implementation of health policy to educate the population on disease prevention and ensure access to health care services will facilitate continued reductions in disability rates and extension of life expectancy possible for all.

Vulnerability of Seniors

In spite of the extended life span and reduction in disability, elderly patients are more vulnerable than younger adults to poor outcomes of care. A reduction in the body's physiological reserve places senior patients at greater risk for disease, iatrogenic injury, and slowed rates of recovery. The physical changes, including decreased muscle mass, total body water, and cognitive function, are reviewed in the Pharmacokinetics and Pharmacodynamics in the Elderly chapter. Adverse drug events occur because of the physical changes in senior patients when drug choice, dosage, and monitoring are not tailored adequately. The overall consequence of these adverse events is a reduction in the individual's ability to function independently in society. The prevalence of chronic diseases in patients older than 70 years of age further contributes to functional dependence. In the elderly, chronic conditions which may impair function include arthritis, high blood pressure, hearing impairments, heart disease, cataracts, orthopedic impairments, sinusitis, and diabetes.

Health Care Disparities

Disparities in health care seen in younger Americans because of ethnicity and socioeconomic status are mirrored in the elderly. In spite of fewer problems with access to care because of the availability of Medicare, 7% of elderly African Americans reported that they needed care but did not get it compared to 2% of Caucasians and Latinos. A major issue in the pharmaceutical care of senior patients is access to prescriptions. Since its inception, Medicare has not covered outpatient prescription drugs except for a specific list of drugs under Medicare Part B. In the 1960s, this omission was not considered important because at the time drugs were relatively inexpensive and a less important tool in the provision of care. However, with the subsequent evaluation of drugs by the Food and Drug Administration for efficacy as well as safety, the explosion of marketed drugs for treating chronic diseases and the sharp inflation in the average prescription price, lack of drug coverage under

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Medicare has become a primary issue for health policy development. Recent studies illustrate the cost issue for senior patients: 20–38% reported a lack of drug coverage and almost 25% reported spending more than \$100 per month for prescription drugs. Seven percent of Medicare beneficiaries taking prescription drugs reported taking less than the amount prescribed because of cost; seniors who reported cost-related drug adherence problems were more likely to have been hospitalized and reported worsening health status.

African-American seniors were more than twice as likely as Caucasians to not purchase a needed prescription drug. The lower incomes, lower rates of supplemental insurance coverage, and higher prevalence of chronic diseases seen in older African Americans explain about half of this disparity. Furthermore, African-American and lower-income Medicare beneficiaries probably receive fewer preventive and primary care services than either Caucasian or more affluent elderly despite the access provided by Medicare, likely reflecting differences in educational, cultural, and behavioral variables.

Distribution of Wealth and Political Clout

An additional source of vulnerability for the elderly relates to monetary income and assets. Almost 50% of people older than 65 years of age in the year 2000 had an annual income of less than \$20,000. This places these patients in a dependent status for government assistance for catastrophic health care services. Furthermore, 55% of this group had less than \$10,000 in liquid assets such that they are unlikely to be able to afford uncovered health care services, such as drug costs or long-term care (LTC). The distribution of wealth in a political group frequently determines that group's political clout. However, senior citizens of all income levels have been grouped together through organizations, such as the American Association of Retired Persons, to increase advocacy for elders. Lawmakers are well aware of the hazards of tampering with senior benefit programs, such as Social Security and Medicare, because the public is most interested in providing assistance for the disabled and poor elderly.

With this organization of political clout, it becomes important to be aware of health care preferences of the elderly. As a cohort, the current population of seniors benefited from the availability of Medicare coverage, extending their lives and living with less disability. The coming cohort of baby boomers will demand more services and benefits. This group will have high levels of education and socioeconomic status compared to the current senior

population. Above all, the elderly want to maintain control of their lives and health care decisions for as long as possible. Services that allow aging in place, such as home care, assisted-living facilities (ALFs), and communities that provide housing with all levels of independence, are gaining popularity and will continue to grow. Pharmacy services for elderly patients living in nursing homes include consultant pharmacist activities as a minimum. However, consultant activities will grow within ALFs, at retirement communities, and in cooperation with geriatric care managers. Seniors are beginning to demand alternatives to entering a nursing home when only one or two ADL are problematic for them.

Use of Services

In spite of the improvement in disability rates and extension of life span, the elderly still consume a disproportionate share of expenditures for health care. Health care expenses for the average elderly individual are 3 times that of an individual younger than 65 years of age. Health care costs during the last year of life constitute a large proportion of total Medicare expenditures. This has been identified as a potential waste of money if the care provided is recognized to be futile. But this more likely is a result of caring for patients who are severely ill with an unclear prognosis. Higher amounts usually are spent on younger patients in life-threatening situations with more aggressive use of artificial ventilation and intensive care monitoring.

At least 82% of the elderly are treated for one or more chronic conditions and 88% of seniors report the use of one or more prescription drug. Overall, more than 3 billion prescriptions are filled per year at a total cost of \$182 billion in 2002. The elderly consume roughly 33% of all prescriptions. These numbers are astounding, but they become directly relevant when growth in health care spending is considered. Although overall growth stabilized in the past few years at about 10%, growth in spending on prescription drugs peaked at 18.4% in 1999 with a subsequent drop to 13.2% in 2002. Factors accounting for the drop include changes in required copayments by insurers, reduced numbers of new drug approvals, and recent patent expirations. However, prescription spending continues to expand more rapidly than other health care costs and use is expected to rise because more people are diagnosed with chronic diseases and physicians are writing more prescriptions per office visit. These numbers paint a bleak picture with the exception that drug expenditures make up only 10% of all health care costs.

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National Challenges in Delivery of Health Care to Seniors

Medicare and Medicaid Programs

Current entitlements for Medicare recipients provide benefits for people older than 65 years of age and to those with disabilities. The program originally was implemented in 1966, serving 19 million patients. The population Medicare serves has since grown to more than 40 million and is expected to almost double again in the next 20 years. The benefits cover hospitalization, physician office visits, and some limited rehabilitative and home care services. However, the deductible for acute hospitalization, 20% of physician fees, and all costs for self-administered prescription drugs are not covered, leaving a large portion of expense for the individual. State-administered Medicaid programs fill in this gap for seniors at the lowest income levels which are defined independently by each state. Other seniors have access to employer-sponsored insurance plans or purchase private supplemental insurance to fill the gap. However, these plans are becoming less available and less affordable. About 10 million Medicare beneficiaries have no prescription drug coverage because they are too wealthy to be covered by Medicaid and too poor to be able to afford supplemental coverage.

Medicare Cost-control Efforts

Despite these items not covered, annual expenditures for Medicare have grown faster than any other federal program and are anticipated to reach \$465 billion by 2012. This increase has occurred because of increasing numbers of beneficiaries, inflation of health care costs, and fraud in billing practices. Three major issues have been identified for health policy regarding Medicare: improvement in efficiency to contain costs, lack of prescription drug coverage, and poor financing of the program by Congress. Implementation of capitated reimbursement in the 1980s helped to slow the growth of Medicare expenditures per capita during that time frame. Further cost-control efforts have been directed at identifying fraud, reducing the number of services used, and capping reimbursement rates for physician services. Demonstration projects in the 1990s that used private health maintenance organizations to provide services in place of the traditional fee-for-service plan were expected to achieve similar savings as observed when private insurance applied them to younger populations. This program has not met expectations in the Medicare population, showing higher costs without evidence of improved care.

Proposals to restructure Medicare so it competes with private insurance plans arose in the late 1990s as a cost-control opportunity. Private plans are more flexible than Medicare and can address problem spending patterns more quickly. This flexibility is particularly important for adopting more efficient practices or in managing the costs of expensive new forms of technology. Furthermore, private plans involving managed care organizations have an

advantage in coordinating care and applying evidence-based medicine given their organizational structure and quality improvement initiatives.

Challenges for Medicare *Coordination of Care*

A major mismatch with the traditional Medicare system and the needs of today's senior is the funding of chronic health care. Because it developed as a program rooted in indemnity insurance to cover expenses for acute conditions, Medicare is lacking in policy and procedures appropriate to coordinate chronic care, home care services, or LTC. What has developed is a patchwork program where Medicare, Medicaid, and the patient pay for differing services and no one is coordinating the appropriate delivery of these services. Because of this conglomeration, there is a common perception that there is significant overlap and even fraud in billing.

Major challenges beyond that of cost-containment for Medicare and Medicaid include access to and coordination of care. Medicare administrators have recognized the program's inability to provide coordinated care because of its payment structure and lack of reward system for high quality care. The program funded demonstration projects to experiment with better ways to coordinate delivery of care for chronic conditions. Case management programs provide individualized care to a select group of frail, high users. The premise was that having a case manager allowed better orchestration of the multitude of costly services that the individual patient required. Physicians may not always communicate effectively to other physicians about an individual patient, and frequently tests and procedures may be repeated. Generic case management proved ineffective at changing use or containing costs in the initial evaluations compared to specialized geriatric case management, which was effective for the same parameters in randomized trials.

Also under testing is disease state management. These protocol-driven programs are framed around people with a specific condition, such as diabetes, and are provided by nurses and/or pharmacists. In contrast to case management, disease state management has improved care, reduced costs, and raised the patient's quality of life. These improvements have been documented in hospital-based clinics, community pharmacies, and managed care settings. Currently, 17 disease state management and case management demonstration projects through Medicare/Medicaid are under way to help health care professionals learn what diseases, types of patients, and reward system can be effectively implemented to encourage an improvement in chronic care delivery. Advanced stage congestive heart failure, diabetes, and coronary heart disease are the prime disease states expected to achieve positive results with a neutral effect on expenditures.

Access to Prescriptions

Harsh policies to control access to prescriptions are sometimes implemented to control costs. Some states tried limiting the number of prescriptions per month that can be funded by Medicaid programs. Drug cost-sharing was instituted in the Canadian system for poor and elderly patients as well. Studies of the initiation of these types of

Table 1-1. Patient Assistance Programs

Sponsor	Web site	Focus
Pharmaceutical Research and Manufacturers of America NeedyMeds, Inc.	www.phrma.org (with a link to HelpingPatients.org) www.needymeds.com	Industry members provide relevant information on their programs Nonprofit organization established by a physician and social worker
National Council on Aging	www.benefitscheckup.org	Prescription and service assistance for seniors
Medicare	www.medicare.gov/AssistancePrograms/	Official Medicare site for assistance programs

limits show that the results may backfire from the intention of the policy-makers. Although prescription drug costs decline significantly, risk for adverse events, emergency department visits, hospitalization, and nursing home admissions rise significantly.

Given that Medicare coverage Parts A and B do not provide payment for most self-administered drugs, elderly patients must identify other resources to obtain necessary prescription and nonprescription drugs. The average monthly out-of-pocket expense reported in 2000 was \$73. More than 80% of the elderly have additional insurance or government programs that cover prescription drugs, such as individually purchased supplemental insurance, Medicare health maintenance organization, employer-sponsored supplemental coverage, Medicaid, or Veterans Affairs/military coverage (i.e., Civilian Health and Medical Program of the Uniformed Services). However, these types of coverage may be limited or intermittent. Patients who report only traditional Medicare coverage or individually purchased supplemental insurance report significantly higher out-of-pocket expenses of \$79 and \$110 per month, respectively. These resources for payment of drugs frequently leave elderly patients lacking. Many patients must take advantage of one or more of these programs.

Stopgap Measures

In working with individual patients who cannot afford prescription drugs, pharmacists must be aware of the various stopgap measures that may provide relief. Each program has inherent advantages and disadvantages for an individual patient and pharmacist. Some of these measures are creative means to obtain necessary drugs and may be controversial opportunities. All of the programs require additional time and effort for enrollment, procurement, and maintenance compared to access provided by insurance carriers.

Pharmaceutical companies have developed patient assistance programs for low-income patients who are not eligible for Medicaid or other programs that provide prescription drugs. Over-the-counter drugs usually are not included. Each program is unique in its determination of

eligibility, procedures for application, and method of distribution. In addition, as companies grow, merge, and change, the programs frequently change. Most programs use from 1.5–3 times the federal poverty guidelines as a threshold for eligibility. The federal poverty level for a person living alone in the 48 contiguous states in 2004 is \$9310. A single independent elderly patient making less than \$18,000 per year would likely qualify for most assistance programs. Pharmacists can stay abreast of these programs by talking with pharmaceutical company sales representatives, reviewing information on Web sites, or calling the toll-free numbers established by the companies for program information. Table 1-1 provides useful contact information. Patients, their advocates, or other health care providers would benefit from an updated listing of the programs and drugs covered. In spite of the barriers, cost-benefits can be substantial at the patient level and the institutional level. One study documents a 6-month net cost-savings of more than \$52,000 where a hospital implemented a service to aid patients in applying for patient assistance programs.

State and local governments often pay for care for patients who do not qualify for Medicaid coverage but have limited financial resources for health services, usually patients at 100–200% of the federal poverty level. Qualified hospitals that provide a safety net for these patients may join a federal program under section 340B of the Public Health Services Act that provides special pricing for outpatient prescription drugs. Needy elderly may be directed to hospitals involved in this program to obtain lower costs for prescription drugs.

Some physicians and clinics have developed elaborate drug sampling programs to assist patients who may fall through the cracks. The pharmaceutical industry has been extremely generous in providing samples of new drugs as a part of their marketing programs. The idea is to provide a limited supply of a new, expensive product so patients and physicians can determine if it is effective for the patients' condition without significant side effects; that way, patients do not spend money on drugs that they may not take. Of

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course, if the drug is effective for those patients, they will subsequently receive a prescription for which they may have to pay full price if the samples run out at the physician's office. One sampling program at a family practice residency model clinic documented dispensing samples valued at more than \$4000 in 4 weeks. However, the true benefit of samples has been questioned because they encourage use of the newer, more expensive products when generics or less expensive brand drugs are appropriate choices. Physicians are more likely to select a drug because it is available as a sample even when it is not the drug of choice for the condition or patient. Furthermore, once a patient is started on a sample, at the time when samples are no longer available, the physician is more likely to continue using the originally prescribed drug, thus driving up costs. Samples have an appropriate role in the initiation of therapy, but evidence should drive their use rather than pure cost issues.

Drug importation is another means by which patients can obtain prescription drugs at a lower cost. Having prescriptions filled in a Canadian pharmacy where prices are government-controlled has saved as much as \$50 per prescription for brand name items. Other seniors travel to Mexico where drugs are available without prescription at reduced prices. This controversial practice is under scrutiny by the federal government, state pharmacy boards, and professional associations. Although technically illegal, the Food and Drug Administration has indicated it would not prosecute patients engaging in the practice for personal needs. Some state boards of pharmacy have closed businesses in the United States who purport to expedite the process, whereas others have developed Web sites to aid the consumer. Because state and federal government is responsible for the public's health, it must act to reduce the risk of a United States citizen receiving adulterated or misbranded drugs. Some pharmacists are hesitant to advise patients taking drugs that they did not dispense. Appropriate screening for drug-drug interactions and other adverse effects may not be completed. Yet, seniors are desperate to reduce their prescription drug bill and will take the risks associated with drug importation. When available, the best alternative is to find other programs such as the patient assistance programs to enable seniors to afford their drugs so continuity of care is provided and legal issues are avoided.

Medicare Prescription Coverage Legislation

In December 2003, Medicare coverage of prescription drugs was signed into law. This law provides assistance through a drug discount card available in June 2004. However, the standard Medicare prescription benefit, crafted as a voluntary stand-alone drug benefit to be delivered through private insurance programs, will not be active until January 2006. Initial projections estimated costs around \$400 billion over 10 years, although this is continually revised upward. This price tag was a contingency for the bills to remain viable with the present economic climate. It also dictated some of the limitations

on coverage defined by the benefit. Clinical pharmacists should be aware of some specific components of the legislation to provide good care for Medicare beneficiaries.

Drug Discount Card

A Medicare Prescription Drug Discount Card has been established as a transitional program to ease the burden of prescription drug costs for the elderly as quickly as possible. Programs are able to use volume to negotiate price discounts for enrolled seniors. Enrollment fees are up to \$30 per year and seniors may choose one program from the many that are offered in their state. Furthermore, Medicare will pay the enrollment fee and \$600 to be used for drug expenses for seniors with incomes less than 135% of poverty who do not have Medicaid. Patients with Medicaid prescription drug coverage are not eligible to enroll. Presently, card programs are expected to save enrollees an average of 17% on their prescription drug costs with savings on some individual items reaching 25%. Pharmacists are being asked to help seniors compare and contrast which program will provide the best discounts for their particular drug regimens. A Web site is available to allow comparison of prices and availability within 209 categories of drugs for each of the card programs (www.Medicare.gov).

Basic Structure of the Part D Benefit

The prescription drug benefit to begin in January 2006 is designated as "Medicare Part D" and will be integrated with Parts A and B. Access to drugs is defined as including those drugs, biological products and insulin covered under Medicaid, and vaccines, provided the drug is used for a medically accepted indication. Exclusions include drugs used for weight loss or gain, fertility, cosmetic or hair growth, cough or cold relief, vitamins and minerals, nonprescription drugs, barbiturates, and benzodiazepines. One exception is smoking cessation products, which will be covered under Medicare. However, the private insurance plans delivering the service are allowed to develop a formulary as long as it meets set standards, such as including drugs under each therapeutic category and class as determined by a pharmacy and therapeutics committee.

Figure 1-1 depicts the coverage defined by the new legislation. About \$420 in annual premiums will be collected from enrollees who will then have a \$250 annual deductible. Partial coverage of 75% of prescription drug costs will be provided until seniors spend \$2250 at which point no coverage is provided until seniors spend over a defined catastrophic limit of \$5100. At this point, Medicare Part D will fund 95% of subsequent expenditures for covered drugs. This limit between \$2250 and \$5100 is referred to as "the doughnut hole" in the legislation. The benefit requires Medicare beneficiaries who are eligible for prescription drug coverage to convert to Medicare Part D to continue receiving benefits. However, these benefits may not be as generous as current Medicaid benefits within an individual state. Furthermore, states are mandated to pay the federal government for their portion of the Medicaid

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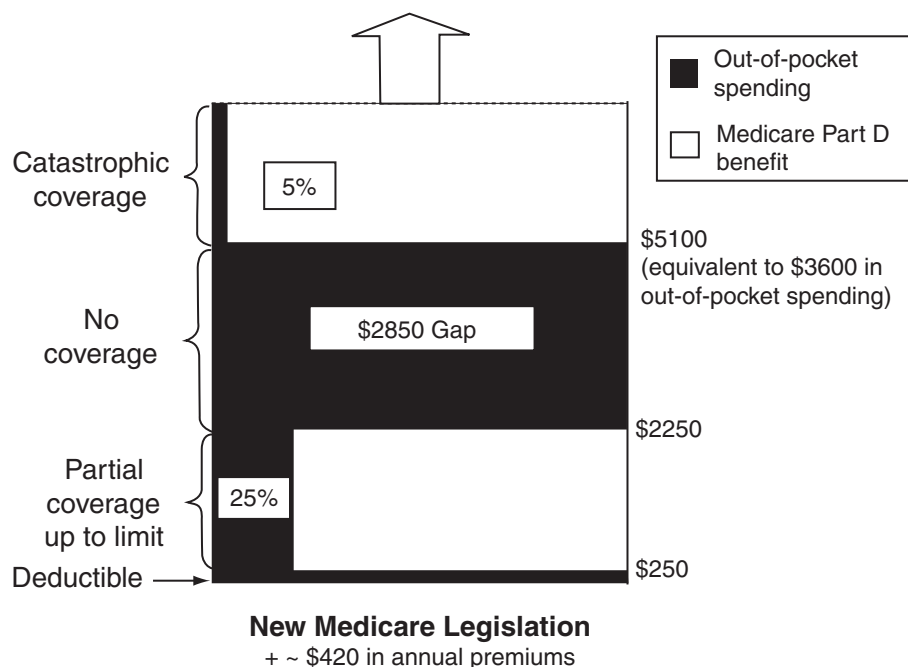


Figure 1-1. Out-of-pocket drug spending under Medicare Part D in 2006.

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beneficiaries' benefit, which has been described as a "clawback" payment. Concern about both the doughnut hole and the clawback payment remains high among lawmakers, seniors, and advocates for seniors. Changes may be passed before the law actually goes into effect.

An important inclusion in the legislation is that of drug use review. Plans must include a cost-effectiveness program and a medication therapy management program. Specifically, the act reads, "The medication therapy management program would be designed to assure that drugs for enrollees with chronic diseases or multiple prescriptions are used appropriately to achieve therapeutic goals and reduce adverse effects." Pharmacist costs associated with the program would be reimbursed. The importance of providing pharmaceutical care along with pharmaceuticals has been recognized by Congress. Seniors will receive not only needed drugs, but also counseling and management needed to gain optimal benefit from their prescriptions. Demonstration projects to further define what the medication therapy management program is and how it will be reimbursed are to be completed before Part D benefit goes into effect in January 2006.

Medicare Pharmacist Services Coverage

In 2003, pharmacists worked with the Senate to pass S.1270, which would recognize pharmacists as providers for Medicare beneficiaries under the Social Security Act. Passage of this policy initiative would allow pharmacists to bill Medicare for services provided "incident to" a physician's diagnosis under Medicare Part B. Progress toward passage of this bill stalled while the more important Part D benefit was considered. In 2004, H.R.4724, the

"Medicare Clinical Pharmacist Practitioner Services Coverage Act," was introduced to renew this effort, although the language is considered more restrictive than in the previous bill. It recognizes clinical pharmacist practitioners with collaborative practice agreements for authorized payment through Medicare Part B. Some pharmacists have voiced concerns with this narrower focus because only 38 states have established collaborative practice for pharmacists and the term "clinical pharmacist practitioner" is not defined under state law

The publication of multiple studies to document need, effectiveness, and economic benefit among patients of all ages for pharmacist cognitive services laid the foundation for these bills. The benefits of consultant pharmacist review of drug use in nursing home residents consistently show improved quality of care. Participation of a pharmacist in interdisciplinary practices in geriatric clinics has further documented quality improvement and cost-benefit. It is imperative that these types of services be recognized for reimbursement under the Medicare system, which requires passage of legislation such as S.1270 or H.R.4724.

Food and Drug Administration Issues

The lack of investigation on the effect of drugs in the elderly in premarketing clinical trials is an important concern. Use of newly released drugs in the elderly, especially the oldest-old, is fraught with missteps. This issue is fully discussed in the Pharmacokinetics and Pharmacodynamics in the Elderly chapter. However, a further issue involves the communication of known pharmacokinetic, efficacy, and toxicity information involving geriatric patients to health care professionals. The

inadequacy of current and comprehensive information for reduced dosing required in elderly patients for 50 drugs not addressed in the package insert was identified in one review. In 1998, the Food and Drug Administration implemented regulations that required manufacturers to include a section on geriatric prescribing for drugs likely to be used in elderly patients. Any data available from premarketing trials would be included to guide clinicians in using the new drug in older patients who may require altered dosing or monitoring. Unfortunately, there is frequently not a significant amount of testing performed with a drug in the elderly, particularly those older than 80 years of age, before marketing. With the increased vulnerability of elderly patients to drug side effects, it is imperative that appropriate dosing adjustments be made at initiation of therapy rather than after a dose-related side effect has occurred. The pharmacist is instrumental in ensuring adjustments are made and in educating the prescriber on proper dosing in elderly patients.

A trend toward making prescription products available over-the-counter after a drug has proven safety use has become the norm in the United States. Although this conversion improves access to effective drugs, it also increases the risk of inappropriate, excessive, or duplicative use of drugs. Usually, the out-of-pocket expense for self-pay patients is less when a drug becomes over-the-counter if it has not already become available generically. However, for patients with prescription coverage, the costs of over-the-counter drugs usually are higher, particularly for Medicaid recipients. The pharmacist is in an excellent position to work with elderly patients to select and use new over-the-counter drugs appropriately and economically.

Another Food and Drug Administration policy affecting elderly patients is direct-to-consumer advertising of prescription drugs. Critics of the practice claim that it causes patients to exert undue pressure on their physicians to prescribe drugs that are potentially inappropriate. This, in turn, may contribute to rising health care costs through use of more expensive pharmaceuticals and mislead the public in health care decision-making, which could potentially cause harm. Supporters believe that patients, as their own best advocates, deserve to have the most information possible and that direct-to-consumer advertising opens up an avenue of conversation between the patient and physician. A recent survey of adults found that 35% of respondents discussed direct-to-consumer advertising during a physician office visit. Of these, 43% received a prescription for the advertised drug. Consumers surveyed did not report an increase in adverse health effects if the new product was prescribed. Other health care actions that went beyond the prescribing of the drug, such as additional laboratory tests, lifestyle counseling, or referrals to specialists, were taken by physicians subsequent to the discussion of the advertised drug. Many elderly patients ask pharmacists about the use of herbal products. The

perception that herbal products are safer and better than prescription or over-the-counter drugs is widespread even though news stories of adverse events, including deaths, have revealed the potential dangers associated with their use. With passage of the Dietary Supplements Health and Education Act of 1994, dietary ingredients used in dietary supplements are no longer subject to premarket Food and Drug Administration efficacy/safety evaluations. In essence, this law established a formal definition of “dietary supplement” that includes vitamins, minerals, amino acids, botanicals, and herbals. Regulations to increase the standardization of dietary supplements were published for comment in March 2003 and may be implemented in 2004. These regulations will increase the Food and Drug Administration’s oversight in the manufacture of herbal products. However, items without proven benefit and items with questionable safety will still be available for seniors to use. The imperative is to always ask senior patients about use of nonprescription items, including dietary supplements, so that potential drug interactions and safety issues can be addressed. Furthermore, for seniors with limited resources, prescription and over-the-counter drugs should be purchased first before funds are expended on herbal products with unproven benefit.

Long-term Care Alternatives

When patients are debilitated such that they can no longer perform all the ADL, they become candidates for LTC or LTC alternatives. Most people rely on help from family and friends yet still incur expenses for services not covered by Medicare. When seniors’ increasing care needs or reduced caregiver resources (e.g., death of a spouse) prevent living independently and family members are unable to provide assistance, they usually are admitted to a nursing home. However, an array of LTC alternatives exist (Table 1-2).

Changes in use of LTC by the elderly show a trend toward home care services and away from nursing homes. Expanded Medicare assistance for home care, development of private insurance coverage for personal services, and growth of community strategies to increase use of assisted-living arrangements developed concurrently with this trend. As large corporations began to manage nursing home facilities, they were able to identify the ADL that could be offered in an assisted-living environment. Retirement communities that allow elders to move from independent housing to assisted living to rehabilitation to nursing home and back again as they are able have established a new paradigm for care of the elderly.

Cohen JS. Dose discrepancies between the Physicians Desk Reference and the medical literature, and their possible role in the high incidence of dose-related adverse drug events. *Arch Intern Med* 2001;161:957–64.

Weissman JS, Blumenthal D, Silk AJ, Zapert K, Newman M, Leitman R. Consumers’ reports on the health effects of direct-to-consumer drug advertising. *Health Aff* 2003;(suppl):W3-82–95.

Table 1-2. Comparison of Long-term Care Alternatives

Type	Independence ^b	Regulator	Health Services	Community Activities ^b	Community Services ^b	ADL Assistance ^b	Cost per Month	Payer
Independent living ^a	Highest	None	None provided	Many	Most	None	Per local housing market	Private funds
Assisted living ^a	Medium	State	Medication management ^c	Many	All	Most	\$350– 3000	Private pay, LTC insurance
Nursing homes	Lowest	State and federal	All primary services	Few	All	All	\$1200–4000	Medicaid, private pay, LTC insurance
Skilled nursing care facilities	Lowest	State and federal	All primary services plus RN services for treatments and procedures	None	All	All	\$2700–5800	Medicare
Subacute facilities ^a	Lowest	State and federal	All primary services plus intensive rehabilitation	None	All	All	\$2700–5800	Medicare

^aIndependent living includes home modification, mother-in-law quarters, congregate living, and senior retirement communities. Assisted living includes assisted-living facilities, board and care, and adult foster care. Subacute facilities include transitional care units and rehabilitation units.

^bIndependence is defined as the level of personal freedom. Community activities include social events, outings, recreational activities, and facilities. Community services include laundry, cleaning, yard work, meals or access to meals, and transportation. ADL include personal care and grooming activities.

^cMedication management provided when allowed by state regulation.

ADL = activities of daily living; LTC = long-term care; RN = registered nurse.

Assisted Living

A unique model of LTC for the elderly, ALFs were developed first in Scandinavia to address the desires of seniors to “age in place”. It provides housing, assistance with ADL, and minor medical care to those who do not need 24-hour assistance offered by nursing homes. Residents in ALFs usually are provided housekeeping, laundry, and transportation services at a minimum. Most ALFs also include one or more meal per day, recreation programs, and health monitoring. Drug administration may or may not be allowed, according to state regulations; although staff may store, distribute, and/or remind residents to take prescribed drugs. In many states, lay persons administer drugs to the residents of ALFs. Unlike nursing homes, this form of LTC is not regulated by federal law, and facilities are not required to contract with a consultant pharmacist. Studies evaluating the outcomes of care in ALFs with clinical pharmacy services have not been published, although improved drug-related outcomes would be expected based on information from nursing homes if the impact of pharmaceutical care at nursing homes can be extrapolated to ALFs.

Other congregate living facilities as variants of the ALF also are emerging to meet the increasing demand. Board and care, adult foster homes, and social health maintenance organizations offer socialization and varying levels of support for ADL, which are difficult to compare. The rapid development of alternatives presents a challenge to policy-makers and lawmakers on many issues, including how to handle medication management services.

Transitional and Skilled Nursing Care

Transitional or subacute care focuses on rehabilitative measures for patients who need to regain a previous level of function. These programs usually are housed as a

designated wing in a nursing home and most often are used subsequent to hospitalization. For example, intense physical therapy, occupational therapy, and speech therapy allow seniors to regain use of weakened muscles, relearn how to walk after hip replacement surgery, or relearn how to speak after a stroke. Frequently, patients are transferred after hospitalization to transitional care to allow adequate time for adjustment of drugs, such as warfarin or insulin, which may be difficult to regulate in the elderly. Pharmacy services in transitional care facilities follow the same regulations as nursing homes, which mandate a drug regimen review every 30 days in addition to oversight of the entire drug use process by the consultant pharmacist.

Skilled nursing care is focused on providing acute care services to patients whose condition has stabilized. Extended intravenous antibiotic administration, long-term ventilation support, and maintenance of drainage tubes are instances that require skilled nursing care services. These units usually are housed as a unit of an acute care hospital, which has a higher level of laboratory and pharmacy services than nursing homes or transitional care facilities have.

Nursing Home Care

The specter of nursing home care frightens many people who observed the care provided before government regulations in the late 1980s. But the reforms and regulations implemented after passage of the 1987 Omnibus Reconciliation Act have made a substantial improvement in quality of care. Each nursing home that receives federal funds must undergo a survey annually to determine compliance with federal regulations. Use of unnecessary drugs and drugs as chemical restraints in residents suffering from behavioral problems has diminished. More homelike

environments are constructed wherever possible. Still, a family patriarch giving up his independence and moving into a nursing home requires a major social adjustment.

Consultant pharmacist services are required for nursing homes receiving funds from the federal government. A complex set of laws mandate monthly drug regimen reviews, evaluation of drug administration, and other quality assurance procedures under the oversight of a qualified pharmacist. Outcomes from drug regimen reviews implemented since the 1987 Omnibus Reconciliation Act have been assessed to reduce drug-related problems and improve care with an annual cost-savings of \$3.6 billion. This evidence can be used to justify consultant pharmacist services in other areas not yet mandated by the federal government.

Palliative care and hospice programs also are considered types of LTC. These programs can be provided either at home, in nursing homes, or in inpatient hospice facilities. Further information may be found in the Palliative Care chapter.

Payers for LTC

Payment for LTC comes from a variety of sources. Costs for ALFs usually range from \$1000 to \$2500 per month, depending on the number of services offered. This cost primarily is funded through self-pay; however, some innovative state programs may provide limited support. In spite of the lack of funding, the ALF industry is growing rapidly, with increases up to 5-fold for the number of available beds in the past 3 years. Medicare pays for rehabilitative care after hospitalization for up to 100 days in subacute facilities. Costs are paid for out-of-pocket and through private insurance until the funds run out. Hospice and skilled nursing care costs also are funded by Medicare.

However, Medicare does not provide funding for nursing home care. Private pay and private insurance cover costs for those with adequate resources. When nursing home residents spend down their resources until they becomes “poor” as defined by their state of residence, they then qualify for Medicaid coverage. Hence, Medicaid has become the largest single payer of nursing home costs, providing full or partial coverage for about 66% of all nursing home residents.

Geriatric Education for the Health Care Workforce

Senior Care Pharmacy

Senior care pharmacists have been characterized as clinicians who apply specialized knowledge in geriatrics, geriatric pharmacotherapy, and drug-related needs to the care of the senior population. Pharmacists who practice as consultant pharmacists in nursing homes comprise the majority of this group. However, senior care pharmacists also can practice in community or hospital settings. The recent development of new models of care expands opportunities to practice in a larger variety of settings,

including senior health clinics, ALFs, and home care programs. The common bond among pharmacists practicing this specialty is the determination to help seniors achieve the highest level of functionality and independence possible. The demand for consultant pharmacists with expertise in senior care will continue to grow as rapidly as the population of elders. The practice will take new forms as new models of care are adapted that include drug management issues.

Geriatric specialization has been available through the Commission for Certification in Geriatric Pharmacy since 1998. However, only 720 of 200,000 licensed pharmacists in the United States are certified in geriatrics. An added qualifications in geriatrics through the Board of Pharmaceutical Specialties is being developed for board certified pharmacotherapy specialists. Individual states have developed registration and licensure requirements for pharmacists who provide care to residents in LTC facilities. For example, Florida requires 12 additional continuing education hours in the practice of geriatric pharmacy for those who wish to practice as consultant pharmacists. Organizations which foster this growth include the American Society of Consultant Pharmacists, the Geriatric Special Interest Group of the American Association of Colleges of Pharmacy, and the Geriatric Practice and Research Network in the American College of Clinical Pharmacy.

The percentage of elderly in the population will rise dramatically in the next 10–20 years. This rise, coupled with the increased need for health care services that accompanies aging, will have a major impact on the need for pharmacists with geriatric training. Few colleges of pharmacy require geriatric courses or rotations even though drug-related problems are highest in this age group. Standards for accreditation from the Accreditation Council for Pharmacy Education offer guidance to prepare students to care for patients without specifically addressing elderly patients. The Argus Commission from the American Association of Colleges of Pharmacy notes the impact of the aging population and growing demands for pharmacists in its report. Recently, the American Society of Consultant Pharmacists produced a guide for a geriatric pharmacy educational curriculum identifying general and specialist competencies in geriatric pharmacy practice. Just as the future holds an increase in population aging, it requires more structure and time spent in geriatric education and training.

Other Health Care Professions

The lack of geriatric education and training has been noted for many years within medicine and nursing disciplines that suffer from deficiencies in training and certification of faculty as well. The Institute of Medicine identified the need for stronger geriatric training in medical schools in its 1993 report. Currently, 87% of schools of medicine report the presence of an academic geriatric medicine program in place. Older patients who receive care from professionals trained in geriatrics and working in interdisciplinary settings experience better outcomes than those who do not. If proper geriatric-focused care could be

Warshaw G, Bragg E, Shaull R, Lindsell C. Academic geriatric programs in US allopathic and osteopathic medical schools. *JAMA* 2002;288:2313–9.

provided in hospital, nursing home, and home care settings, costs could be reduced by at least 10% per year, culminating in a projected savings of \$133.7 billion in the year 2020. The savings would result from reduced hospital admissions, reduced falls, and large reductions in functional declines.

Shortages of pharmacists and other health care professionals plague the United States and other industrialized countries. With the current workforce aging along with the general population, this shortage will compound as older workers retire. Because most professionals practice for 40 years after graduation, even if training were to begin today for health care students, it would not permeate the professions for generations. Practicing pharmacists, nurses, and physicians must receive education and training through continuing education to be prepared to provide quality geriatric health care as both independent professionals and members of interdisciplinary teams.

Interdisciplinary Teams in Geriatrics

The demand for pharmacists trained and certified in geriatrics will continue to grow as the health care system adapts to meet the needs of senior patients. Studies document that interdisciplinary teams are the preferred method of providing care to seniors in different settings. Hospitals will adopt the framework of the acute care for the elderly units because the hazards of hospitalization for senior patients are profound. Goals of the acute care of the elderly unit are to maintain and promote independence through a microsystem of supportive physical environment, patient-centered care, discharge planning, and geriatrics-based medical care review. In addition, inpatient geriatrics team care reduced unnecessary and inappropriate drug use and increased the use of appropriate drugs.

Veteran's hospitals formally established interdisciplinary geriatric teams that coordinated care for senior veterans both in hospitals and clinics on a broad scale beginning in the early 1980s. Interdisciplinary Team Training in Geriatrics and the Geriatric Research, Education, and Clinical Centers focused on preparing health care professionals to work together to provide optimal treatment to elderly veterans. Clinical sites were subsequently developed under the geriatric evaluation and management program, which showed that patients treated in a geriatric evaluation and management unit had higher levels of function and fewer days of LTC after discharge. Furthermore, researchers documented fewer serious adverse drug reactions in the outpatient setting and less suboptimal prescribing in both inpatient and outpatient settings for patients treated within the interdisciplinary setting.

Outpatient seniors outside Veterans Affairs hospitals have fewer options. The Program for All-Inclusive Care for the Elderly provides a day care-based system aimed at keeping elders at home. Federal support through Medicare and Medicaid waivers aided the spread of Program for All-Inclusive Care for the Elderly programs to multiple sites

across the country, primarily in urban settings. However, the real effects of the programs on survival, function, and cost are unknown.

Inpatient and outpatient geriatric-focused care continues to be the exception rather than the rule. Additional research into the cost-benefit and quality of life effects of these innovative interdisciplinary programs is required. Furthermore, the roles and responsibilities of pharmacists in these settings that make a difference in patient outcomes need to be elucidated. The John A. Hartford Foundation funds such research and scholarship to support development of interdisciplinary teams to improve health care delivery that involves interdisciplinary care for geriatric patients.

Interdisciplinary education is difficult to develop because of the lack of medical or nursing schools on the same campus as many colleges of pharmacy. The Health Resources and Services Administration has developed funding for Geriatric Education Centers located throughout the country whose goal is to educate students, faculty, and health professionals from all disciplines in the principles of caring for the elderly. At least four professions must be served for funding to be granted to a Geriatric Education Center. Specific criteria for developing interdisciplinary education and training are applied to each curriculum.

Summary

Margaret Mead said, "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has." Her statement encapsulates the reason pharmacists must understand and help shape health policy surrounding pharmaceuticals and health care. Implementation of Medicare in the 1960s is an example of how health policy has made a tremendous impact on the health and longevity of elderly patients. As science advances, health care delivery must change to apply those advances; therefore, health policy directing this application must evolve. In many cases, success does not depend on which policy is adopted, but on the will and effort to solve the problem.

With successful achievement of an extended life span and reduced disability comes new challenges. National policies developed by Congress, the Food and Drug Administration, and individual states will continue to develop to meet these challenges. The impact of a prescription benefit through Medicare which incorporates medication therapy management services will undoubtedly be significant to the practice of pharmacy as pharmacists who care for seniors. At least 12% of the patients cared for by the average pharmacotherapy specialist are seniors and this percentage will rise dramatically in the next 10–20 years. Being able to provide the right drugs at the right dosages in the right dosage forms with the right amount of counseling and medication therapy management will allow

Cohen H, Feussner J, Weinberger M. A controlled trial of inpatient and outpatient geriatric evaluation and management. *N Engl J Med* 2002;346:905–12.

Schmader KE, Hanlon JT, Peiper CF, et al. Effects of geriatric evaluation and management on adverse drug reactions and suboptimal prescribing in the frail elderly. *Am J Med* 2004;116:394–401.

pharmacists to help seniors maintain their highest level of independence and productivity throughout the duration of their lives.

Annotated Bibliography

1. O'Neill G. *The State of Aging and Health in America*. Washington, D.C.: Merck Institute of Aging and Health and the Gerontological Society of America, 2003.

This report summarizes data on the health status of Americans older than 65 years of age and the inadequacy of the current health care workforce to provide quality care for this group. A chief concern addressed is the increased life span of Americans that may not be accompanied with improved health and quality of life. Data depict the failure of the United States to meet targeted goals from Healthy People 2000 for seniors, especially for preventive care. A state-by-state report card identifies few states that meet targets for healthy behaviors, vaccinations, and screenings. Although almost 20% of older adults experience mental disorders, few seek and/or receive adequate mental health care. In its closing section, the report focuses on the lack of geriatric training provided in schools and for practicing clinicians. Calls to action punctuate the report to spur clinicians and health policy gurus to meet the challenge anticipated with the aging United States population.

2. Safran DG, Neuman P, Schoen C, et al. Prescription drug coverage and seniors: how well are we closing the gap? *Health Aff* 2002;(suppl web exclusives):W253–68. Available at <http://content.healthaffairs.org/cgi/reprint/hlthaff.w2.253v1.pdf>. Accessed February 26, 2004.

This data-rich report provides results and analysis of the resources seniors use to obtain their prescription drugs. The survey found significant differences among states in how likely seniors were to report that they could afford their prescriptions, poverty levels, and the presence of chronic conditions. The data identified that Medicaid does not meet the needs of low-income seniors. Furthermore, the authors discuss the problems experienced by those with no prescription coverage and call for the adoption of a national solution.

3. Henry J. Kaiser Family Foundation. *Summaries of the Medicare Prescription Drug Improvement and Modernization Act of 2003*. Menlo Park, CA: The Foundation, 2003. Available at <http://www.kff.org/medicare/med011604pkg.cfm>. Accessed February 26, 2004.

The Henry J. Kaiser Family Foundation provides excellent coverage of health policy issues in the United States. This particular Web report provides a summary of Medicare Part D prescription drug coverage in several formats. A brief slide show presentation, abbreviated tables, and a comprehensive guide are available for review. Details regarding access to drugs in the comprehensive tables explain what drugs will be covered and excluded, the role of formularies and pharmacy and therapeutics committees, the appeals process, and drug use review requirements. Key in this legislation is the provision for medication therapy management to be developed in conjunction with physicians and pharmacists. This provision is not widely addressed in the media although to optimally improve care for seniors in the United States prescription coverage must be provided along with pharmaceutical care. The inclusion of the medication therapy

management service helps to ensure that drug-produced outcomes are optimized. This site will continue to be useful to monitor policy changes that will affect the profession of pharmacy as the bill is implemented and possibly revised by Congress.

4. Feder J, Komisar HL, Niefeld M. Long-term care in the United States: an overview. *Health Aff* 2000;19:40–56.

This review discusses which patients need long-term care (LTC), who pays for the care, what trends are seen, and what policy decisions are to be made. The authors aptly identify many unmet needs and the problems associated with inadequate integration and coordination among different care settings, care providers, and financing. The impact of increased use and interplay among home care, assisted-living facilities (ALFs), and unpaid help has identified the need for increased insurance for LTC, whether privately or publicly supported. Although this review does not mention drugs, it provides a useful overview of the systems of care with which pharmacists interact as they care for frail older patients.

5. Murray MD, Callahan CM. Improving medication use for older adults: an integrated research agenda. *Ann Intern Med* 2003;139(5 Pt 2):425–9.
6. Landefeld CS. Improving health care for older persons. *Ann Intern Med* 2003;139(5 Pt 2):421–4.

These two companion articles are focused on how clinicians and researchers must move forward to improve the chances that older adults will age successfully, although the editor of the supplement admits that it is difficult to define successful aging. Reference 5 identifies difficulties in using drugs beneficially in the elderly to arrive at consensus on the direction for research involving drugs in the elderly. The author calls for better drugs for diseases affecting the elderly, information on how to dose drugs correctly and monitor their effects in this population, studies on adverse drug events, methods to encourage appropriate prescribing and adherence, and improved provider-elderly patient communication. Reference 6 discusses the testing of drugs and procedures as well as the need to improve health care delivery in specific settings. The author recommends standardization of functional assessment, identification of the causes of functional decline and recovery, study on discontinuity of care, measures on quality of care throughout the continuum, and health system changes that can improve care for the elderly.

7. Anderson GF, Hussey PS. Population aging: a comparison among industrialized countries. *Health Aff* 2000;19:191–203.

This concise description of population aging in eight industrialized countries, including the United States, is used to springboard further discussion on the effects to be anticipated over the next 20 years. A review of health care expenditures, LTC care trends, retirement tendencies, and resulting income is used to forecast the future and identify policy implications. Policy-makers are directed to learn from Japan and Germany's experiences as they have the largest elderly population. Significant differences between the United States and other nations are the lack of uniform provision of prescription drug coverage and reliance on private sector funding of retirement and LTC.

8. Berenson RA, Horvath J. Confronting the barriers to chronic care management in Medicare. *Health Aff* 2003;(suppl):W3-37–53.

Medicare has developed from the perspective of indemnity insurance which hampers its ability to effectively meet the needs of seniors for care of chronic conditions. One model of chronic care provision emphasizes identification of patients with high risk to receive greater attention through evidence-based management. However, most preventive and case management services are not reimbursed under the current Medicare program. The authors describe how the system might be improved through increased payment for office visits, clinical care management, disease state management, and a new home visit benefit.

9. Hanlon JT, Lindblad CI, Gray SL. Can clinical pharmacy services have a positive impact on drug-related problems and health outcomes in community based older adults? *Am J Geriatr Pharmacother* 2004;2:3-13.

A review of the evidence that clinical pharmacy services can influence health outcomes in the elderly is presented. Interventions and results from 14 published randomized, controlled trials in the home setting, at hospital discharge, in the clinic, at community pharmacies, or in LTC facilities are described. Improvement in quality of drug use, including adherence and prescribing practices in the elderly patients, were consistent. However, only isolated global improvements were identified, such as improvement in health status; reduction in hospital admissions or mortality; or a decrease in drug costs, outpatient visits, or readmissions. The authors call for large scale, multicenter studies using formal pharmacoeconomics methods to further elucidate the impact of clinical pharmacists with specialty training in geriatrics may have on patient outcomes.

10. Bootman JL, Harrison DL, Cox E. The health care cost of drug-related morbidity and mortality in nursing facilities. *Arch Intern Med* 1997;157:2089-96.

The authors determined the probability for drug-related morbidity and mortality in LTC facilities from survey of an expert panel composed of pharmacists and physicians. The probabilities were incorporated into a probability pathway and cost-of-illness analysis performed to estimate the annual cost of drug-related morbidity and mortality in nursing facilities. Without the services of consultant pharmacists, the baseline annual costs were \$7.6 billion compared to \$4 billion with consultant pharmacists providing the mandated retrospective review of each LTC resident's drug regimen, representing a 54% reduction in the cost of drug-related morbidity and mortality for this population.

SELF-ASSESSMENT QUESTIONS

Questions 1–3 pertain to the following case.

M.K. is an 86-year-old Caucasian woman with osteoarthritis, osteoporosis, diabetes mellitus, and hypertension. She comes to your ambulatory care clinic today with concerns about how she can continue to pay for her drugs on a fixed income. She has Medicare Parts A and B, but does not have any supplemental insurance that covers drug expenses. She lives alone and her annual income is about \$15,000. She has heard about the Canadian importation of prescription drugs and asks for your help with the Internet to get her prescriptions. Her drugs include alendronate 35 mg once a week, amlodipine 10 mg every day, celecoxib 100 mg every day, fosinopril 40 mg every day, and rosiglitazone 4 mg every day.

1. Which one of the following alternatives to using Canadian prescription drugs is best for M.K.?
 - A. Enroll M.K. into patient assistance programs where possible because her annual income is less than \$18,000.
 - B. Change the amlodipine to nifedipine, the fosinopril to captopril, and the celecoxib to ibuprofen to take advantage of generic drug pricing.
 - C. Provide samples from pharmaceutical companies to last until her next clinic visit.
 - D. Determine eligibility for Medicaid coverage because her income is below that defined for poverty.
2. M.K. also reveals to you that during a 3–4-week period every spring she experiences allergic rhinitis that responds well to loratadine. Which one of the following describes how the over-the-counter availability of this drug impacts her financial ability to obtain this drug?
 - A. She is eligible for a patient assistance program that covers over-the-counter loratadine.

- B. Loratadine is available over-the-counter at a reduced cost compared to the prescription item.
- C. The availability of over-the-counter loratadine saves her money because she does not have to pay for a doctor's appointment to obtain a prescription for the drug.
- D. The cost of over-the-counter loratadine is not different from the prescription loratadine.

3. M.K. also uses over-the-counter oxymetazoline spray for her allergic rhinitis as needed. She saw an advertisement in a recent issue of *Southern Living* for fluticasone nasal spray for allergic rhinitis. She says the advertisement states the drug was nonhabit-forming compared to over-the-counter sprays. She is concerned about using an “addictive” drug and wonders why such a drug would be available over-the-counter. She asks you about getting a prescription for fluticasone. You discuss with M.K. the advantages and disadvantages of fluticasone in her situation. Which one of the following statements is most correct?
 - A. Direct-to-consumer advertising contained an inaccurate statement about over-the-counter nasal sprays and addiction.
 - B. Direct-to-consumer advertising helped M.K. be her own best advocate.
 - C. Direct-to-consumer advertising wasted time for M.K. and the pharmacist.
 - D. Direct-to-consumer advertising gave M.K. false hope for a cure for her allergic rhinitis.

Questions 4–6 pertain to the following case.

A local newspaper reporter contacts you for information about the new Medicare prescription drug benefit approved by Congress.

4. Which one of the following statements do you want to have included in the newspaper discussion of the legislation?
 - A. The proposal was originally estimated by the Congressional Budget Office to be less than \$400 billion in costs over 10 years.
 - B. The Medicare prescription drug benefit is designed primarily to help the poorest segment of the elderly population.
 - C. A periodic drug regimen review by a pharmacist is required by the Part D benefit as a proven method to improve appropriate use of drugs in the elderly.
 - D. Cost-controls for the pharmaceutical industry will be implemented as part of the Medicare prescription benefit.

5. The reporter asks for information regarding the use of a formulary. Which one of the following explains how a formulary will limit seniors' access to needed drugs?
 - A. Outcomes data from the limited formularies in the Veterans Affairs, Department of Defense, and private insurance plans that cover drugs do not show a decrease in access because of formularies.
 - B. Access will be limited; however, without formularies, Medicare cannot cover all drugs because of financial constraints.
 - C. Access will not be limited because seniors will be able to choose a plan that includes their drugs.
 - D. Drugs from every class will be made available to seniors with mechanisms for obtaining nonformulary drugs in special circumstances.

The newspaper reporter is writing a companion piece to the prescription benefit story that compares the costs of assisted-living facilities (ALFs) in the area. She asks you how drugs should be obtained, stored, and administered in the facilities. You recommend that she include a paragraph in her article regarding the potential benefits of having the services of a senior care pharmacist available at an ALF.

6. Which one of the following facts documenting the impact of consultant pharmacists helps you support this recommendation?
 - A. Inappropriate storage and administration of drugs by staff at an ALF without a consultant pharmacist have increased drug errors by 55%.
 - B. Drug regimen reviews in nursing home settings help to reduce costs for drug-related problems by \$3.6 billion annually.
 - C. Provision of consultant pharmacist services has been documented to decrease the number of prescription drugs to 8.9 per resident in ALFs.
 - D. Assisted-living facilities with the services of senior care pharmacists are associated with improved quality of life indicators for residents.

Questions 7 and 8 pertain to the following case.

G.C. is a 90-year-old man with Alzheimer's dementia. His physical level of function is still high, but his family insists

that he requires help with several activities of daily living (ADL), such as cooking and cleaning. His drugs include donepezil 10 mg every morning and enteric-coated aspirin 81 mg every evening with supper.

7. Which one of the following describes the level of long-term care (LTC) that is best to consider for G.C.?
 - A. Nursing home with a dementia wing.
 - B. Subacute care for training with drug management.
 - C. A home-based palliative care program.
 - D. An ALF that provides drug administration.

8. G.C.'s two children also are elderly at the ages of 68 and 70. They express a desire for their father and themselves to "age in place". Which one of the following explains what political weight they possess as senior citizens to make this possible?
 - A. Senior citizens have the highest income of any other age group.
 - B. Seniors have developed successful advocacy organizations.
 - C. Social Security benefits can be diverted by the government to fund retirement facilities.
 - D. Most Americans cannot identify with the desire to age in place.

Questions 9 and 10 pertain to the following case.

A geriatric care manager is evaluating B.K., a patient who has multiple medical, social, and financial issues. She has developed an interdisciplinary team for this patient with the physician, nurse practitioner, and a social worker, but has not yet considered addition of a pharmacist.

9. In addition to providing drug regimen assessment, a plan for alternative drugs more appropriate for elderly patients, and patient counseling, which one of the following needs is best met by pharmacists trained in geriatrics that make them valuable members of an interdisciplinary team?
 - A. Pharmacists could assess drug-related problems for the team to aid in achieving goals of the care plan.
 - B. Pharmacists could ensure billing practices for care management are optimized for maximum reimbursement from Medicare.
 - C. Pharmacists could act as an authoritative resource to eliminate the use of dietary supplements in elderly patients.
 - D. Pharmacists could assist with coordination of drug changes for a move to a nursing home.

10. B.K. has frequent admissions to the hospital for congestive heart failure. Which one of the following explains how Medicare Part A covers these expenses?
 - A. Medicare Part A covers 100% of acute inpatient hospitalizations.
 - B. Medicare Part A covers 100 days of hospitalization for any single diagnosis.

- C. Medicare Part A covers most of acute hospitalization expenses with Medicaid filling in the gap.
 - D. Medicare Part A covers hospitalization with a deductible that may be covered by Medicare supplemental insurance.
11. If, in the future, there is a slight increase in life expectancy and a delay in onset of morbidity, which one of the following explains what impact this will have on federal prescription expenditures when Medicare includes a prescription drug benefit (assuming other factors are held constant)?
- A. National expenditures would be held constant in this scenario.
 - B. Expenditures would decrease as a percent of gross domestic product.
 - C. A relatively short period of disability with reduced prescription use per person would result in reduced expenditures per person.
 - D. Expenditures per person would rise substantially and place a huge burden on the health care system.

Questions 12 and 13 pertain to the following case.

R.M. is a 72-year-old African-American man with a diagnosis of hypercholesterolemia and hypertension. His drugs are atorvastatin 20 mg and lisinopril 20 mg. He has no insurance coverage for drugs and confides that he has limited financial resources.

12. Compared to a similar Caucasian patient, which one of the following best describes what R.M. is likely to do?
- A. He is just as likely to take the drug as prescribed.
 - B. He is more likely to enroll in a health education program.
 - C. He is less likely to purchase the drug prescribed.
 - D. He is more likely to purchase the drug prescribed.
13. R.M. believes garlic capsules will cure his high blood pressure and high blood cholesterol. Which one of the following statements best describes the documented safety and efficacy of garlic as an example of herbal products used in place of prescription drugs?
- A. Safety is well-documented, but efficacy is not.
 - B. Efficacy is well-documented, but safety is not.
 - C. Both safety and efficacy are well documented.
 - D. Neither safety nor efficacy is well documented.

Questions 14 and 15 pertain to the following case.

E.S. is a 67-year-old woman with coronary heart disease, hypertension, and asthma. She has relatives living in south Texas whom she visits every 3 months. She currently is taking hydrochlorothiazide 25 mg/day, extended-release metoprolol 100 mg/day, aspirin 81 mg/day, montelukast 10 mg at bedtime, and fluticasone/salmeterol inhaler two puffs 2 times/day.

14. E.S. asks you about purchasing montelukast and the inhaler in Mexico during her next trip to visit her

relatives. Which one of the following issues concerns you most in regard to purchasing drugs in Mexico?

- A. The safety and purity of drugs imported from Mexico.
- B. The risk of arrest and prosecution by the Food and Drug Administration.
- C. The inability to identify drugs produced in a foreign country.
- D. The cost of taxes imposed as she declares the purchases at the border.

At E.S.'s next clinic visit, the physician starts her on esomeprazole for gastroesophageal reflux disease. He gives her samples to last 30 days and a prescription to fill if she gains relief and can tolerate the drug. This proton-pump inhibitor is not on the formulary for her supplemental Medicare coverage and she will have to pay out of pocket for the prescription. Over-the-counter omeprazole is about half the cost and lansoprazole is listed on the formulary.

15. Which one of the following statements best describes the outcome of sample use for esomeprazole in E.S.?
- A. Samples are used to ensure a patient tolerates a new drug.
 - B. Samples drive up the cost of an elderly patient's prescription drugs.
 - C. Samples are used to save money over a year of therapy for E.S.
 - D. Samples are dispensed inappropriately by a physician.

Questions 16 and 17 pertain to the following case.

You are a consultant pharmacist responsible for a 100-bed nursing home. Administrators tell you they plan to convert 20 beds to a transitional care unit.

16. Which one of the following best explains how your services will be affected with this new unit?
- A. Services will increase because of the higher intensity of care to be provided with physical therapy.
 - B. Services will decrease because drug administration is not offered as a service in transitional care.
 - C. Services will remain the same because transitional care facilities follow the same regulations as nursing homes for drugs.
 - D. Services will increase because of implementation of self-administration program as part of the rehabilitation process.
17. Another expansion the administration is considering is the purchase of an apartment complex next door to convert into an ALF. The state regulations for assisted living prohibit drug administration as a component of services provided but do allow for drug storage in a central location. Consultant pharmacist services also are not mandatory. Which one of the following

statements best describes how consultant pharmacist services would be included in the ALF?

- A. Services for drug management could be offered for residents willing to pay cash to the pharmacist for services.
- B. Services could not be used because the state does mandate their need.
- C. Services would be the same as the services for the nursing home even though not required by the state.
- D. Services would be limited to inspection of drug storage area because of state regulations.

Questions 18–20 pertain to the following case.

M.H. is an 81-year-old woman who resides in a nursing home. She has diabetes mellitus, hypertension, diabetic peripheral neuropathy, vitamin B₁₂ deficiency, and seizures; she also suffered a stroke. Her drugs include phenytoin 400 mg at bedtime, extended-release nifedipine 90 mg/day, cyanocobalamin 1000 mcg intramuscular injection every week, furosemide 20 mg every morning, clonidine 300 mcg 2 times/day, gabapentin 300 mg at bedtime, rosiglitazone 4 mg/day, and insulin 70/30 20 units subcutaneous injection daily at 7 AM.

- 18. Which one of the following statements best describes why M.H.'s drug regimen is reviewed by a consultant pharmacist?
 - A. Because it is recommended by guidelines from the American Society of Consultant Pharmacists.
 - B. To reduce the risk of unnecessary drugs and increase functionality.
 - C. Every 100 days that she resides in the nursing home her drugs must be reviewed.
 - D. To ensure the least expensive generic drug is being used.
- 19. M.H. develops pneumonia and is transferred to an acute care hospital. Successful treatment of M.H.'s pneumonia required a 14-day hospital stay. During this time, she became incontinent and unable to walk without assistance. Which one of the following is the best discharge plan for M.H.?
 - A. Transfer back to her nursing home bed.
 - B. Transfer to an ALF that can provide assistance with ADL.
 - C. Transfer to a skilled nursing care facility to complete her oral antibiotics.
 - D. Transfer to a transitional care facility for physical therapy.
- 20. On another visit to treat pneumonia in the acute care hospital, M.H. was in an acute care of the elderly unit. Which one of the following best describes why interdisciplinary care in an acute care of the elderly unit is preferred for M.H.?
 - A. It helps prevent the decrease in functionality that occurred in her first hospitalization.
 - B. It improves billing and reimbursement because of assessment for more comorbidities.

- C. Patients are housed in an environment with other elderly patients with stroke.
- D. Fewer disciplines than on a typical adult medical unit are involved in M.H.'s care to prevent confusion and delirium.

Questions 21 and 22 pertain to the following case.

W.H. is a 74-year-old man who seeks care in the local Veterans Affairs Medical Center. His past medical history includes severe chronic obstructive pulmonary disease, osteoarthritis, depression, low back pain with spasm, and gastroesophageal reflux disease. He is admitted to the Veterans Affairs hospital for treatment of dehydration.

- 21. Which one of the following advantages would W.H. most likely obtain from treatment in a geriatric evaluation and management program compared to standard care?
 - A. Care is coordinated by a hospital-based physician.
 - B. He would qualify for an adult foster care program.
 - C. He may be able to perform more ADL successfully and have fewer days in LTC.
 - D. He would be evaluated by a pain management specialist provided by the geriatric evaluation and management unit.
- 22. As a veteran, W.H. currently receives his prescriptions for a small copayment. Which one of the following changes will occur as a result of the passage of Medicare prescription drug coverage?
 - A. No change because he is qualified to receive his drugs from the Veterans Affairs.
 - B. The copayments would be covered under the new law.
 - C. The Veterans Affairs formulary would be changed to adopt the new Medicare prescription drug formulary, possibly requiring some of his prescriptions to be changed.
 - D. He would pay a new \$35 monthly premium to maintain his coverage.

Questions 23 and 24 pertain to the following case.

As pharmacy director at a small community hospital, you have become aware of the need for more training in geriatrics for the pharmacists on your staff.

- 23. Which one of the following statements is the most important health issue your pharmacists need to understand as they provide pharmaceutical care to seniors?
 - A. Drug dosing in elderly patients is similar to dosing in pediatric and adult patients.
 - B. About 7% of elderly patients take less than the prescribed amount of drug because of cost.
 - C. Interdisciplinary geriatric care does not include a pharmacist.
 - D. Board certification in geriatrics is required to participate in interdisciplinary teams.

24. The endocrinologist who admits patients to your hospital is developing a diabetes disease state management program at his clinic. He is familiar with nurse-developed programs. Which one of the following is the most persuasive justification can you provide to include a pharmacist on his team?
- A. Pharmacists are reimbursed for providing cognitive services to Medicare patients.
 - B. Pharmacists are trained in interdisciplinary skills to facilitate improved coordination of care.
 - C. Pharmacists have reduced overall cost of care in diabetes disease state management programs.
 - D. Pharmacists have reduced mortality in diabetes disease state management programs.
25. Which one of the following statements best describes how drug therapy management services under the new Medicare Part D prescription drug benefit will be paid for?
- A. Initially, through a drug discount card.
 - B. When provided by board certified pharmacotherapy specialists.
 - C. For diabetes and congestive heart failure disease state management.
 - D. After evaluation through demonstration projects.

