Pharmacy Practice in the Long-term Care Environment

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OBJECTIVE:

To review developments in the long-term care environment as they pertain to pharmacy practice.

DATA SOURCES:

Current literature describing the long-term care environment.

STUDY SELECTION:

Not applicable.

DATA EXTRACTION:

Not applicable.

DATA SYNTHESIS:

Long-term care is not synonymous with nursing home care. It encompasses a variety of care environments that offer high-quality yet less-expensive alternatives to traditional nursing homes and represents a wide array of services formats that differ in name and description among states and regions. Health improvements, increased attention to quality of life, and the need to reduce the cost of care will stimulate the growth of long-term care facilities that are alternatives to nursing homes.

CONCLUSION:

The growing and evolving long-term care environment presents pharmacists with significant opportunities to expand their role. Managed care organizations must take note of pharmacists' accomplishments in long-term care and use their expertise to maximize the advantages of drug therapy, minimize the chance of adverse effects, and encourage cost-effective therapy.

KEY WORDS: Elderly, Long-term care, Consultant pharmacy, Pharmaceutical care

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As pharmacy practice has evolved, many pharmacists have found considerable success in the long-term care (LTC) environment. Initially focused on nursing home care, LTC pharmacy practice has evolved to meet the changing needs and format of this rapidly expanding and challenging continuum of care.

Long-term care is simply and most appropriately defined as care that is provided for an extended period of time. This type of care can be practiced in a variety of settings. While the traditional nursing home remains a major focus, LTC also is provided in a host of other environments, each with its own unique definition and challenges. These include assisted-living facilities, hospices, and special units (e.g., for subacute or Alzheimer's disease care).

THE ELDERLY POPULATION

The elderly population is defined as those persons 65 years of age or older. Increased life expectancies have changed the nature of the elderly population. Today's elderly—especially the “young old” aged 65-74—often are still employed, financially independent, active, and generally healthy. The LTC services provided to this segment of the elderly population typically are offered on an ambulatory basis. Many persons in the 75-84 age group—the “middle old”—are still relatively healthy and able to live independently or with limited assistance, although the likelihood of age-related illness and the subsequent need for some type of LTC is increased. The “old old”—age 85 and older—frequently are frail and

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suffer from numerous chronic illnesses of varying severity. They often require comprehensive LTC and a range of social and personal services.

The elderly population, currently numbering 34 million,¹ has been increasing gradually over the years. However, a growth spurt is expected between 2010 and 2030 when the first of the baby boomers reach age 65. By 2030, the total number of persons aged 65 and older will reach 70 million.¹ Meanwhile, as the elderly population grows by 75% during this period, the under-65 population will increase by only 7%.²

The fastest growing segment of the elderly population currently is and will continue to be the over-85 population. In 1995, 11.6% of people in the 65-and-over age group were 85 years old or older. This percentage will grow steadily to 15.5% in 2010. In 2050, nearly one-fourth of all the elderly will be over age 85, and at least 1 in 13 Americans will be 80 or older,² compared to 1 in 35 in 1990.¹ The 100-and-older population, estimated at 76,000 in 1995, is projected to increase dramatically, reaching almost 1.5 million by 2080.¹

LONG-TERM CARE AND THE ELDERLY

Long-term care is provided to patients of all ages; however, 70% of patients in need of LTC, including care delivered in environments other than nursing home, are elderly.³ The rapid population growth of elderly, especially the oldest old, will have a profound impact on health care consumption, delivery, and cost. The incidence and cost of chronic conditions requiring LTC—such as hip fracture and Alzheimer's disease—are predicted to increase dramatically. By 2040, it is predicted that 840,000 hip fractures will be treated at a cost of \$6 billion (in

Table 1. The Spectrum of the Long-Term Care Environment^{16,17}

Hospital-based nursing facility
Subacute care
Nursing facility
Psychiatric hospital
Intermediate care facility for the mentally retarded
Community-based care
Adult congregate living
Adult day care
Home health care
Community mental health center
Hospice
Senior center
Retirement housing
Correctional facility
Home care
Independent community living

Table 2. Terminology Describing the Community-Based Care Environment^{18,19}

Residential care facility
Assisted-living home
Board and care home
Chronic custodial care
Congregate care
Domiciliary care
Home for adults
Residential home
Rest home
Sheltered housing
Group home for the mentally retarded
Adult foster home
Community-based care facility
Leisure care facility
Retirement housing
Adult care facility
Life care—continuing care retirement community
Catered housing
Personal board and care
Domiciliary care
Sheltered care
Subsidized apartment building
Residential board and lodging facility
Senior apartment building
Personal care home

1987 dollars), compared to 220,000 in 1987 at a cost of \$1.6 billion. The number of patients with Alzheimer's disease is predicted to increase from the current 4 million to as many as 10 million in 2040, and their treatment will cost \$149 billion (in 1985 dollars).^{4,5}

The number of elderly persons needing LTC is projected to increase to 13.8 million by 2030; 5.3 million will reside in nursing homes.³ Most nursing facility residents are elderly—1.3 million (90%) are age 65 and older, and 45% are over the age of 85.⁶ By 2040, there could be as many as 5.9 million nursing facility residents over the age of 65; 55% to 65% will be 85 or older.⁴

It is important to note that 80% of the 7.1 million elderly who need LTC and assistance with activities of daily living (ADL) reside in the community—at home or in a non-institutional residence. (ADL includes personal hygiene and grooming, transfer and ambulation, toileting, eating, communication, and managing medications.) And this number is expected to grow.

These changing demographics will place additional demands on the nation's health care system as needs increase and resources dwindle. Alternatives to nursing home care will be needed, and there will be increased attention to health care interventions, including pharmacotherapy, that will reduce or

Table 3. The Growing Long-Term Care Environment—Opportunities for Pharmacists²⁰

Assisted Living: 30,000 to 40,000 assisted-living facilities care for more than one million people
Board and Care: 32,000 licensed homes care for 500,000 people
Adult Day Care: 10,000 adult day care centers will exist by the end of the decade
Home Health Care: 14,000 home health care agencies serve 6 million home-bound people
Hospice: 2,500 hospices serve more than 340,000 patients a year
Continuing Care Retirement Communities: More than 1,000 exist now, and their number is predicted to grow to 10,000 in the future
Retirement Housing—Senior Living Communities: More than 2,500 communities exist
Senior Citizen Centers: As many as 12,000 senior centers serve between 5 and 8 million people a year

delay morbidity in this at-risk population. The current LTC environment, as well as that of the future, presents expanding opportunities for pharmacists and other practitioners.

At-risk Elderly

Numerous difficulties make care of the elderly challenging. First and foremost, these patients are at increased risk of experiencing drug therapy problems including adverse drug reactions and interactions, poor compliance, and medication errors. Also, age-related changes in the kidneys, liver, and other organs influence the pharmacokinetic and pharmacodynamic properties of many medications and may affect the efficacy or toxicity of drug therapy.^{7,8} To ensure the highest quality of care for their elderly patients, pharmacists practicing in the LTC environment must be familiar with the complexities and clinical nuances of geriatric pharmacotherapy.

The Healthy Elderly

While it is true that most elderly individuals are at greater risk for some illnesses and problems, there is evidence that this population is increasingly healthy and that Americans are becoming more optimistic about later life. In fact, half of all Americans think they will enjoy life more when they get old, and two-thirds look forward to reaching the age of 100. In addition, 41% plan on retiring before the age of 65, 29% plan to retire at age 65, and 26% expect to work past that age. Twelve percent have no plans to retire at all. Virtually all of those planning retirement intend to lead active lives featuring travel, time spent with family and friends, participation in sports and other recreational activities, and part-time or volunteer work.⁹

At the same time, the rate of disability in the elderly population may be decreasing; current studies show an increase in the proportion of elderly persons reporting no disabilities.¹⁰

This positive trend may be due to technological advances in surgical techniques, such as cataract removal and joint replacement, that enable patients to resume normal activities on recovery. Other reasons for decreased disability in the elderly may include higher education and income levels, which long have been associated with better health. Also, many elderly people are taking steps toward maintaining a healthier lifestyle that includes eating healthier foods, smoking less, drinking less alcohol, getting more exercise, and reducing stress.¹⁰ While their numbers grow, older Americans are becoming more vigorous and interested in maintaining their quality of life. This population will not accept traditional nursing home care, especially if other options are available.

LONG-TERM CARE CONTINUUM: THE IMPACT ON PHARMACISTS

The growth of the older population is having a profound effect on the entire LTC environment. Many older persons who do not need nursing care per se are finding quality and affordable care in living environments that are less formal than those of nursing homes. Many alternatives to nursing home care are evolving in response to the numbers and preferences of the older population. What formerly was characterized primarily as a skilled or intermediate nursing facility is now an assortment of more than a dozen distinct LTC settings (see Table 1).

The LTC setting that is growing most rapidly generally is referred to as community-based care. The care provided in this environment allows residents to maintain maximum independence, yet affords them with necessary health care services. Community-based care is offered in a number of ways and a variety of facilities and is described by more than two dozen terms (see Table 2).

The true spectrum of LTC settings is limited only to the imagination of those who define these new care environments. It is likely that as the long-term care environment continues to develop, additional innovative environments that feature independence and an emphasis on quality of life will evolve.

While the definition and appearance of the many community-based care environments differ, they share some important common features:

- ▲ Patients living in this environment are at risk of experiencing problems with drug therapy.
- ▲ Caregivers commonly have a less sophisticated understanding of drug therapy than their counterparts working in licensed nursing facilities.
- ▲ As a rule these less formal environments do not yet have adequate pharmacy services.

These facts translate into tremendous and growing responsibilities and opportunities for pharmacists, including those in managed care (see Table 3).

EVOLUTION OF PHARMACY PRACTICE IN LONG-TERM CARE

Pharmacy practice in LTC began in the 1950s and gradually has evolved into a well-defined practice model. In the decades between World War II and the enactment of the Medicare and Medicaid programs in 1965, long-term care was state regulated. Conditions often were abysmal. There was little accounting for medication use, and social services were unavailable. During this period, state and federal funding encouraged the construction and upgrading of nursing homes. At the same time, however, requirements for pharmacy involvement were minimal or non-existent.

The enactment of the Medicare and Medicaid programs provided a means for positive change by addressing the potential for drug therapy problems. The initial requirements for participating in and receiving reimbursement from these programs specified that in nursing homes (then referred to as long-term care facilities) "the charge nurse and the prescribing physician together review monthly each patient's medication." In spite of this requirement, drug therapy problems continued; and shocking reports continued to relate tales of nursing home care that was unsanitary, unsafe, and compromised by misuse of medications.

Continued attention focused on drug therapy problems in nursing homes which, for regulatory purposes, were divided into two levels of care—*skilled* and *intermediate* care facilities. Skilled nursing facilities (SNF) provided 24-hour nursing care, while intermediate care facilities (ICF) provided less-intense care.

In 1974, conditions for SNF participation in Medicare and Medicaid were strengthened to include a drug regimen review (DRR) to be performed at least monthly by a licensed pharmacist. This stipulation was part of more comprehensive standards for the supervision of pharmaceutical services. These standards included requirements for control, accountability, and proper labeling of medications and biologicals, as well as the establishment of a pharmaceutical services committee, which required the formal participation of a pharmacist.

It is important to note that this mandate for pharmacy services was not based on a long track record of pharmacists' accomplishments in LTC. Rather, it was based on the assumption that as a discipline specializing in the proper use of medication, pharmacy would be able to solve drug therapy problems that others could not. In fact, when the pharmacist-conducted drug regimen review (DRR) was first mandated, few pharmacists had a clear idea of what this would entail. Caring for the older patient was not part of the training at most pharmacy schools.¹¹ It was an entirely new frontier of practice.

Led by the example of a few innovators and visionaries, pharmacists began to define and refine the DRR process. They developed their clinical skills, sharpened their communicative abilities, and collaborated with other SNF staff to define new practice responsibilities. Pharmacists monitored drug therapy

and made recommendations to physicians, who at the time were not accustomed to having anyone question their prescribing. Pharmacists involved in the early years of nursing home practice can attest to the fact that not all physicians gracefully accepted their comments. However, most physicians soon realized that pharmacists possessed unique expertise that would contribute to improved nursing home care.

Consultant Pharmacy Practice

The pharmacist's role as a drug therapy expert and an integral member of the interdisciplinary long-term care team gradually was recognized and formalized. This was a key step in the development and formalization of an aspect of pharmacy referred to as *consultant pharmacy practice*.

In consultant pharmacy, the pharmacist takes on the role of problem-solver and advocate for the older patient. It does not require a particular degree or formal advanced degree training. Only a few states require additional credentials to work as a consultant pharmacist. It is open to all pharmacists who are willing to accept the challenges it offers.

Not limiting its activities simply to the required DRR, consultant pharmacy made great progress in a short time. Practitioners shared stories of their success with colleagues, published reports of their accomplishments, and continued to develop new approaches to caring for the older patient. Where no definition of DRR existed, pharmacists developed one. Where standards for nursing home pharmacy practice were lacking, pharmacists wrote them, thus assuring the continued evolution of pharmacy practice in LTC.

Table 4. Selected Pharmacist Activities in the Long-Term Care Environment²¹

Drug regimen review (DRR)
Development of innovative medication distribution systems
Resident assessment and care planning
Drug utilization or use review (DUR)
Drug use evaluation
Quality assurance activities
Continuous quality improvement (CQI)
Infection control
Formulary development
Nutritional support services
Policy and procedure development
Committee participation
Laboratory test ordering and interpretation
Therapeutic drug monitoring
Facility staff inservice education and training
Medication pass observation
Participation in state survey process
Clinical research
Pharmacoeconomic studies
Specialized clinical activities

Pharmacists practicing in the LTC environment provide a range of cognitive services, from the required DRR to geriatric clinical research. The extent of involvement and variety of services offered depends on the pharmacist's motivation, formal training or experience, practice environment, relationship with other caregivers, and the availability of reimbursement for services. The efforts of the pharmacist often are well beyond the minimum standards mandated by federal regulations. Many pharmacists have become involved in highly innovative, interactive, and progressive practice activities (see Table 4).

Pharmaceutical Care Outcomes and Consultant Pharmacy Practice

The measurement of quality of care in nursing facilities has shifted from standardizing the process of providing care to measuring the outcome of that care. All services provided in nursing facilities and other LTC settings, including pharmacy services, will be judged by this new standard.¹² No matter what services the pharmacist offers, he or she must devote constant attention to assessment, accountability, achievement of positive outcomes, and the continuous improvement of services.

Table 5. Selected Pharmaceutical Care Services of Consultant Pharmacists²²

Drug regimen review (DRR)
Monitoring outcomes of patient care
Identifying and resolving drug interactions
Counseling patients
Monitoring drug therapy compliance
Selecting cost-effective drugs
Using pharmacokinetic dosing
Following good formulary management practice
Conducting drug utilization or use reviews (DURs)
Educating health care professionals
Providing case management to coordinate medication use

Traditionally, evaluators of therapy have focused on indicators of health, primarily morbidity and mortality, as the important outcomes to measure. More recently, the definition of outcomes has broadened to include quality of life, health status, health functioning, cognitive functioning, physical functioning, and patient preferences. To satisfy these broader definitions, LTC pharmacists must continue to shift their attention from the dispensing of medications and take full responsibility for the outcomes of their professional activities and therapeutic decisions.

Pharmaceutical care is becoming the domain of all pharmacists, but it is the main focus of consultant pharmacy practice. Consultant pharmacists are well equipped to provide

pharmaceutical care because many of the routine practice activities they already offer are oriented towards patient outcomes and pharmaceutical care.¹³ (see Table 5). Consultant pharmacists have the opportunity and responsibility to monitor outcomes and are able to make decisions about the course of care based on these observations. They need to consider how they can incorporate outcomes data into their day-to-day patient care decisions. As tools to assess quality of life become more widely available, consultant pharmacists will have additional professional opportunities to increase their activities in this area. Consultant pharmacists will work with the interdisciplinary team in a variety of environments—from hospitals to LTC to home health care—to assess health status and improved outcomes and quality of life.

DEVELOPMENTS IN DRUG THERAPY: IMPLICATIONS FOR MANAGED CARE

The continuing growth of the elderly population has had an effect on the long-term care environment. This effect is just a glimpse of what is yet to come. And the elderly population holds great significance for managed care.

Research in recent years has brought significant developments in the pharmacotherapy of age-related conditions. These include the introduction of new antidepressants with favorable side-effect profiles, new therapies to manage lipid disorders, drugs to treat prostatic hypertrophy, and most recently, drugs to treat Alzheimer's dementia. Science will continue to develop drugs for these and other diseases of aging.

According to a recent survey of the U.S. pharmaceutical industry,¹⁴ more than 100 new products for diseases of aging are currently being researched (see Table 6). The availability of many of these newer agents creates a significant dilemma for managed care organizations, because long-term benefits from pharmacotherapy may require significant initial financial expenditures.

The availability of new drugs often precedes a full appreciation of whether their use by the elderly will be cost-effective. For example, although it has been demonstrated that the management of lipid abnormalities is beneficial in the adult population, it is not known whether the same benefits accrue in the elderly. Healthcare providers also question whether drug

Table 6. Selected New Drugs in Development for Diseases of Aging

Number of Drugs in Development	Disease
20	Rheumatoid arthritis
18	Respiratory/lung disorders
17	Diabetes
15	Osteoporosis
14	Alzheimer's disease

therapy should be used to manage prostatic enlargement in lieu of expensive surgery. The availability of new drugs for Alzheimer's disease adds even more confusion to the overall picture since in some patients, but not all, the use of these agents may delay nursing home admission and the expensive care that goes with it.

Managed care organizations must develop interventions including approaches to disease-based management, such as geriatric formularies, that will govern the appropriate use of these agents. The widespread use of new drugs that are not cost-effective must be avoided. However, at the same time, the appropriate use of agents that will benefit elderly patients must be encouraged. Formularies, critical pathways, and other tools used for elderly patients in managed care must be developed specifically for this population and not just adapted from those used for general patient populations. Medications and therapies that are used cost effectively with younger patients may not produce the same outcomes with elderly patients. In developing drug benefit programs, the literature as it relates specifically to the geriatric population must be considered.

Implications for Pharmacy Practice

Long-term care has not attracted the attention of managed care organizations in the same way that primary and acute care have, although significant exceptions exist in Minnesota, Arizona, Tennessee, and South Carolina, where programs are in place to bring managed care to LTC by combining payment for acute and LTC under a single capitated rate.¹⁵ As a rule, managed care organizations may shy away from the low-income, chronically ill elderly who have high health care use with costs that may be difficult to manage and predict.¹⁵

The economic realities of LTC are likely to demand the attention of managed care organizations in the near future. After all, the elderly and disabled account for 70% of the nation's Medicaid expenditures, much of which is for LTC patients.¹⁵

Managed care providers must realize that the expertise of pharmacists is crucial to the success of evolving LTC for many reasons: The population of the elderly, especially the frail elderly who are more likely to experience drug-related problems is growing; care is increasingly likely to be provided both by nonprofessionals and by professionals who have less than optimal knowledge of pharmacotherapy; new and expensive drugs are more available; and the need is growing for outcomes research that documents whether the new interventions in pharmacotherapy add to the quality of health care or simply increase costs.

The experience and skills that pharmacists have acquired in nursing homes have become a template for advancing pharmacy services in the rapidly growing LTC environment that exists outside of the nursing home. Inevitably, this will include LTC environments within the realm of managed care. ■

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