ABSTRACT

STRONG MINDS, GENTLE HANDS: TRAINING THE NEXT GENERATION OF “GERONTOLOGICAL PHYSICIANS”

by Leanne June Clark

As the older population rapidly grows, the shortage of physicians trained in geriatrics will become more critical. Physicians trained to understand the complexities that can accompany the aging processes will become increasingly important for a high-quality health care system in an aging society. This report explores this problem known as the geriatric imperative, and suggests training the “gerontological physician” as a solution. Data from the AAMC’s Graduate Questionnaire was analyzed for trends in perceptions of geriatrics education and training from 1978 to 2003. Results indicate increasing trends in student perceptions of adequate geriatrics training; increasing enrollment in geriatrics electives; and greater confidence in geriatric knowledge and skills. This analysis and the geriatrics literature demonstrate that we have begun to address the geriatric imperative, but more work is needed to ensure all elders received effective, high-quality health care.
STRONG MINDS, GENTLE HANDS: TRAINING THE NEXT GENERATION OF “GERONTOLOGICAL PHYSICIANS”

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This work is dedicated to my grandparents

Leila and Charles Clark
&
Jean and Fred Collins

The roots of my family, the inspiration for my success.
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Introduction

The evidence of our rapidly aging population is everywhere. A “niche market” catering to aging baby-boomers has evolved, and advertising efforts have been launched to promote specialized products for elders (Gardyn, 2003). Indeed, 12.6% of the general population is now 65 years or older, a triple in percentage from the early 1900s when only 4.1% of the population were 65 or older. The older population will show continued growth in the future, as older adults will comprise 20% of the population, or over 71.5 million people by 2030 (AoA, 2003). In addition, life expectancy continues to increase in the United States. Today, a 65 year old can expect to live another 18.1 years on average, a significant increase since 1950, at 13.9 years (CDC, 2003). This new wave of increased longevity is part of the “demographic transition,” which results from a decrease in birth and death rates, thereby strengthening the overall proportion of older adults within a population (Markson, 2003). This transition is hallmarked by important health-related trends, including improvements in medical technology, the eradication of infectious diseases, and the shift from infectious to chronic conditions as major causes of death. As America experiences the demographic transition, many adjustments must be made to accommodate the growing numbers of elders. While the marketing and advertising industries have launched efforts to recognize this group, the medical system—which will clearly experience significant impacts from the aging of America—has lagged behind. There is a longstanding lack of geriatric education integrated into schools of medicine and a severe shortage of geriatricians in the workforce.

Acknowledging the challenge shared by all health care industry professionals, including social work, pharmacy, nursing, and allied health professions, this report explicitly focuses on the implications that our aging society holds for geriatrics and medical doctors. Special attention is paid to the future generations of physicians, starting at the undergraduate level (years one through four of formal medical school) of medical students. The first chapter provides an overview of the field of geriatrics and how geriatricians utilize their specialized training in practice. Benefits of geriatric care are also discussed. The second chapter describes what is known as the “geriatric imperative,” provides a brief history of geriatrics, and reviews the literature surrounding
the geriatrics training that medical students are currently receiving. Responses to the geriatric imperative are discussed in Chapter 3, highlighting two strategies: training more specialized geriatricians, and training the universal, “gerontological physician.” Finally, the fourth chapter presents an analysis of data that identify the trends and shifts in medical student perceptions of geriatrics.
**Chapter 1:**

**Physicians and The Older Patient**

*Geriatrics*

As defined by Dr. Leslie S. Libow in 1981, geriatrics is “not general medicine for the elderly. Geriatric medicine is a special aspect of medicine that focuses on those distinct phases of illness, settings of illness, clinical problems, and planning issues relevant to the health of the elderly and generally overlooked by the acute-illness orientation of the health system,” (Somers, 1981, pp. 315). Its own medical subspecialty, geriatrics is the comprehensive, holistic focus on the multiple, often complex, and interrelated conditions that older adults face as they age. Geriatrics seeks to promote wellness and preventative care, with a special emphasis on maintaining physical functioning, independence, and high quality of life. Many fields are encompassed by geriatrics, including internal and family medicine, neurology, pharmacology, psychiatry, urology. Although there is disagreement within the field, geriatrics is most often considered a primary care role, rather than a more consultative subspecialty of medicine. This distinction is important for both the educational and health policy arenas, as time and money are allotted to various aspects of medicine based on classification as a specialty or subspecialty (Blanchette & Flynn, 2001).

*Geriatricians*

Physicians certified as geriatricians are initially trained in family practice or internal medicine, then complete a minimum one-year fellowship in geriatric care. Geriatricians must pass an exam to become certified, and are also required to pass a recertification exam every ten years. As experts in caring for older adults, geriatricians are trained in a wide variety of topics important to elders, including the management of chronic illnesses; clinical issues commonly faced by elders such as incontinence, depression and falls; the coordination of other providers and services to maintain independence; decision-making with family members and caregivers; and the appropriate use of medications (AGS & ADGAP, 2004). Table 1.1 provides a comprehensive list of topic areas in which geriatricians are trained. Multiplicity of diseases, conditions, or
illnesses is common among older patients; the compounding of these often makes geriatrics a particularly challenging specialty. Geriatricians frequently employ multidimensional assessment tools, encompassing physical, psychological, functional, social, and economic aspects of the patient (Warshaw et al., 2002). Assessment of functional ability and prevention of functional decline are two of the most important goals of geriatrics (AAR, 1996).

William Hazzard, MD, perhaps sums the work of a geriatrician best as he describes himself as, “…by definition, an expert in subtlety and complexity,” (Hazzard, 2004, p. 161). In his brief article, he explains the many responsibilities he holds as a geriatrician, as well as the inspiration and reward that his job provides. It is these rewards that Dr. Hazzard and other geriatricians hold as one of the most important aspects of geriatrics. Gaining inspiration and passion from the older patient, witnessing the improvements in lives of older patients through medical intervention, facing the challenges and complexities of caring for older adults, and the opportunity to have meaningful one-on-one interactions with patients are among the professional rewards that geriatrics bring (Hazzard, 2004; AGSS, 2001; Nyberg & Muller, 2002). It is these career opportunities and rewards that experts recommend be communicated to medical students and residents to understand the nature of this field, and perhaps to recruit them into geriatrics.
Table 1.1: Key Characteristics of Specialized Training in Geriatrics
Sources: AGS & ADGAP, 2004; Warshaw et al., 2002; Estrine, 2001; AAR, 1996

<table>
<thead>
<tr>
<th>Common Characteristics of Geriatrics Training</th>
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<tr>
<td>Management and Assessment of Common Conditions, including:</td>
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<tr>
<td>• Dementia</td>
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<tr>
<td>• Confusion</td>
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<tr>
<td>• Chronic Pain Management</td>
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<tr>
<td>• Falls/Instability</td>
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<td>• Incontinence</td>
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<td>• Malnutrition</td>
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<td>• Osteoporosis</td>
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<td>• Sensory Impairment</td>
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<tr>
<td>• Depression</td>
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| Understanding of the Biopsychosocial and Physiological Aging Processes as they: |
| • Interact with conditions and diseases |
| • Impact clinical health, physical and mental functioning, and independence |
| • Influence access to medical care, including transportation, accessible entrances, accessible examination rooms, and medicine management |

| Distinguishing disease processes from physiological changes associated with normal aging processes |

| Coordinating Care and Decision-Making with: |
| • Other health care providers |
| • Social service providers |
| • Family members |
| • Caregivers |

| Maintaining Patient’s Quality of Life and Functional Independence |

| Providing Care Across A Range of Clinical Settings, including: |
| • Hospital |
| • Office |
| • Private Home |
| • Nursing Home |

| Understanding Medications: |
| • Appropriate Dosage |
| • Polypharmacy |
**Geriatrics in Practice: A Critical Element of Medicine**

It is important to note that not all older adults need or use geriatricians. Some research suggests that only 15% of the current Medicare population need geriatric care; however, in 2003, this would include approximately 6 million elders (CMS, 2004). Of older adults that do need geriatric care, there are two categories of older adults who need specialized geriatric care: community-dwelling elders with multiple chronic conditions, and residents of long-term care facilities. Non-institutionalized older adults with five or more chronic conditions account for a large proportion of a geriatrician’s patient base. These patients have a high need for specialized geriatric services, including transitional care coordination, family and patient consultation, and medication management. For these individuals, receiving care by a physician who understands the complex interactions between their chronic conditions and other processes of aging is a must; unfortunately, data shows that these persons, as frequent users of health care services, often lack adequate access to such care (AGS & ADGAP, 2004).

The second group of geriatric patients consists of elders living in various long-term care settings that have affiliated geriatricians. These residents have the benefit of receiving at least some level of geriatric assessment, care coordination, and medication management (AGS & ADGAP, 2004). However, this group is small. There are no geriatrics certification or training requirements for physicians serving as directors of long-term care facilities, so residents of these settings are not guaranteed the services of a geriatrician.

For individuals utilizing the services of geriatricians, the benefits of geriatric care are great. Yet many stakeholders other than older patients also stand to gain from comprehensive geriatric care, including family members, caregivers, publicly funded programs and policies, and the medical system itself.

**Benefits to Older Patients and Their Families**

Geriatric medicine holds comprehensive and holistic care as central concepts of practice. While general medical practitioners also treat patients with these characteristics in mind, there is a specialized understanding of complex physical, social, and psychological interactions by geriatricians. Physicians not adequately trained in geriatric
medicine may overlook these interactions, or worse, perpetuate a false notion that
growing old inevitably results in becoming frail and dependent (AAR, 2002). Perhaps
the greatest benefit of geriatrics for older adults and their families is the understanding
that age is not a disease, and elders can regain and maintain a high quality of life and independence.

Media reports have portrayed the problems of physicians not knowledgeable
about geriatrics, including dangerous misdiagnoses, overmedications, and lack of
incentives to spend extra time with older patients (e.g., Goldstein, 2002; AP, 2004).
Geriatricians are trained to recognize and assess symptoms such as depression, which is
commonly under-diagnosed and treated as cognitive impairment. Further, geriatric care
assessments can uncover overlapping conditions that are often missed by general
practitioners, such as hearing loss, which can in turn cause symptoms of depression or
cognitive impairments (AAR, 2002). Physicians who cannot spend adequate time to
discern serious conditions from seemingly irreversible problems misinterpreted as normal
aspects of aging risk the very lives of their patients. An example of such an occurrence
was documented in Time in 2002, as a 79-year old woman was untreated for memory and
balance problems that were eventually diagnosed by a geriatrician as a reversible problem
within the anatomy of her brain (Goldstein, 2002).

Important benefits of geriatric care include: maintenance or slowing of decline in
physical functioning; a decrease of time spent in inpatient settings, including hospitals
and long-term care facilities; a reduction in disability; and improved social and emotional
functioning (AGS & ADGAP, 2004). As older consumers spent $3,586 on average for
out-of-pocket health care expenditures (AoA, 2003) in 2003, the benefits of geriatric care
could potentially have a positive impact on the financial status of patients utilizing the
care. Together, these benefits promote higher levels of quality of life, and increased
independence. Family members and caregivers of geriatric patients experience these
benefits as well, as the financial, emotional, and physical hardships of assisting elders are
reduced. Research has documented that care provided by geriatricians results in
increased patient and family satisfaction (AGS & ADGAP, 2004), and better overall
results with medical care (O’Neill & Barry, 2003).
Benefits to Public Programs and Private Payers

The economic implications of geriatric care are clear when considered in the context of decreased negative outcomes resulting from inappropriate care of older adults. This is particularly salient for publicly funded programs heavily utilized by older adults, such as Medicare and Medicaid. In 2002, health care spending climbed to $1.6 trillion, accounting for 14.9% of the U.S. gross domestic product, up from 14.1% in 2001. Medicare alone represented $267 billion of the spending, with Medicaid nearly equal at $249 billion. Prescription drugs, hospital expenses, and physician services were among the leading areas of overall expenditure in 2002, at $162.4 billion, $486.5 billion, and $340 billion respectively. While a large percentage of these costs are paid for through private insurance and out-of-pocket funds, 46% of are funded through Medicare and Medicaid (CMS, 2004).

These expenditures reflect areas targeted by geriatric care, through which significant reductions could be made. Research estimates that reductions in hospital, nursing home, and home care use resulting directly from geriatric care could save up to $133.7 billion by the year 2020 (AAR, 2002), a clear advantage for all stakeholders, including publicly funded programs. In 1995, the GAO estimated that complications related to medications resulted in hospital stays, costing approximately $20 billion annually. Such complications included improper dosage and adverse reactions to medications—topics in which geriatricians receive specialty training. Similarly, geriatricians are uniquely trained to assess risk, prevention, and root causes of falls; fall-related injuries resulted in over $20 billion in direct medical care each year (O’Neill & Barry, 2003). The Alliance for Aging Research estimated that if geriatric care were more widely and consistently available to reduce nursing home and home care costs by a conservative 10%, the United States could have saved $50.4 billion in 2000 (AAR, 2002). More empirical studies of the direct link between geriatric care and cost reductions are needed to explore this benefit. However, there is potential that America could see significant savings in an industry dominating such a large portion of annual expenditures through the provision of geriatric care to older adults who need it.
Benefits to the American Medical System

As numbers of older Americans rise, physicians of every specialty will experience this demographic shift in their own practices. Although general family and internal medicine practitioners are commonly considered to have the greatest number of older patients, physicians experiencing the highest rates of visits by adults over age 65 include cardiologists (59.7% of all patients), urologists (53.1% of all patients), and ophthalmologists (51.5% of all patients) (O’Neill & Barry, 2003). Even pediatricians may feel this shift, as they begin dealing with grandparents and other older relatives as primary guardians of their young patients. In order to provide adequate, high quality, and cost-effective care to older persons, physicians in all sectors of the medical system should be trained in the core concepts and skills of geriatrics.

The benefits and necessity of geriatrics to the American medical system will be discussed in great detail throughout this paper. Having discussed the field of geriatrics, how the geriatric practitioner is trained and treats elders, and the benefits of this care for various stakeholders, attention will now be turned toward the urgency of geriatric medicine in America today, known as the “geriatric imperative.”
Chapter 2:
The Geriatric Imperative: From Demography to Urgency

Demographers and gerontologists have long been discussing the rapid aging of American society and considering the implications of this demographic shift. In the tradition of ‘structural lag’ discourse, many societal institutions have fallen behind in the creation and implementation of programs and policies that are appropriate to the needs of an aging population. This is visible in the public policy arena, and is widely discussed among social gerontologists in the context of age-based societal norms and roles (Wiley, Kahn, & Foner, 1994). The structural lag concept, or the idea that there is “an imbalance or delay in the response of social institutions to changes in individual experiences,” (Morgan & Kunkel, 2001) can also be strikingly seen within the medical care industry. Gerontologists and geriatricians alike are increasingly considering the implications of the rapidly aging society for our medical system, as health care providers are, as a whole, under-trained to serve the older population. This phenomenon has become recognized as the “geriatric imperative.”

The term “geriatric imperative” became popular in the early 1980’s, used to describe the enormous impact that the aging of American society would have upon the health care system that was, and continues to be, ill prepared to provide care for this group. Recognition of the rising numbers of elders and their unique health care needs, increased life expectancies, proportion of medical utilization and costs incurred by older adults, and the shortcomings of Medicare to provide cost-effective coverage for a rapidly-expanding beneficiary base were the primary statistical facts driving the urgency of the geriatric imperative. Topics traditionally under-taught in medical schools and over-generalized by practicing physicians also contributed to the urgency of the geriatric imperative. These included the disease process of strokes, dementia and diabetes; long-term care as a professional interest; patient-family counseling; and death/end-of-life care. As these topics became important in geriatrics but continued to be ignored in the general medical system, the geriatric imperative called for a greater focus and understanding of these and other issues faced by older adults (Somers, 1981). In summary, the geriatric imperative called for attention to the demographics of the health care system, the critical
shortage of trained geriatricians, and the need for improvements in medical education related to topics vital to the care of elders.

The geriatric imperative continues today as conceptualized over twenty years ago. Despite the calling for more training and research of and attention to the rapidly aging society, the medical care system has only begun to make improvements in the quest to recruit more geriatricians and integrate the principles of geriatric medicine into all medical areas. While these efforts have created some progress, many more strategies and efforts are needed to ensure appropriate, effective, and cost-efficient treatment for the growing numbers of older adults. Before the current state of geriatrics is described and discussed, it is useful to provide a historical context within which to consider the field, and the imperative that geriatrics continues to face.

*History of Geriatrics: Early Recognition of the Geriatric Imperative*

The fundamental concepts and ideologies of geriatrics and gerontology extend far into history, with the first writings appearing in 44 B.C. It was then that Cicero wrote what is considered to be the first text on gerontology, as he described his own perceptions of aging, including a decreased desire for good conversation and good food. Centuries later, Robert Bacon followed in 1683, when he published his recommendations of proper diet, rest, exercise, hygiene, a moderate lifestyle, and “the breath of a virgin” as keys to a longer life. These first two works served as the foundation upon which centuries of gerontological and geriatric texts would be written; and paving the way for a mixture of fact and fiction to enter into modern societal perceptions of aging (Chase, Mitchell, & Morely, 2000). Although many ideas contained in these early texts are ageist, and most have disappeared with the modernization of medicine, many of the basic tenets of geriatrics have directly evolved from these and subsequent works.

Dr. Ignatz Leo Nascher first coined the term “Geriatrics” in 1909, to describe the medical practice of treating older adults. Derived from the Greek terms geras, meaning “old age”, and iatrikos, meaning “of a physician,” Dr. Nascher created the word to parallel the field of “pediatrics,” to emphasize the necessity of considering the unique care and treatment of elders (Libow, 1990; Chase et al, 2000; Warshaw et al, 2002). He is credited as the founder of geriatrics in America, although earlier papers had been published primarily in Europe (see Day, 1849; Charcot & Loomis, 1881; and
In 1914, Nascher published “Geriatrics: The Diseases of Old Age and Their Treatment,” in which he outlined not only physiological concerns of geriatrics, but also societal and legal issues associated with caring for elders and the family implications of old age. He recognized and educated others about the heterogeneity of elders, and asserted that old age did not produce disease, but rather the processes of aging led to increased risk of disease. These concepts remain central to both gerontology and geriatrics. Interestingly, during Nascher’s life, only approximately 4% of the population lived to age 65, and yet today, many of his observations are still unrecognized in a country with nearly 13% of the population considered to be “old.”

From 1909 until his retirement in 1928, Dr. Nascher is credited with numerous articles, texts, lectures, and leadership that led to the evolution of geriatrics in modern-day medicine (Libow, 1990).

**Growth in Geriatrics: Developing Organizations and Educational Initiatives**

The 1930’s and 1940’s saw the creation of professional geriatric and gerontological organizations, publications, and the first geriatric curriculum developments in America. In 1939, the Club for Research in Aging in the United States was founded, later to become the internationally known Gerontological Society of America in 1945. Dr. Nathan Wetherell Shock became the chief of the National Institute of Health’s “Unit on Gerontology of the Division of Physiology” in 1941, and was instrumental in asserting that old age and the processes of aging were not diseases. His research helped inform modern medicine of the underlying biological factors responsible for aging (Warshaw et al., 2002). The American Geriatrics Society was established in 1942 as well, with both organizations hallmarking the importance medicine was beginning to place on the need for research and training in geriatrics (Libow, 1990). Dr. Nascher, among other leaders in geriatrics, was part of this establishment (Warshaw et al., 2002). Dr. Edmund Vincent Cowdry first considered demography in the context of geriatrics in his “Problems of Aging,” as he noted the increasing proportion of the population that older adults comprised (Cowdry, 1945). Finally, the first geriatrics curriculum was developed and taught in a graduate class in 1944. These milestones sustained the movement to bring geriatrics into the medical area, although with little additional success in developing geriatrics as a specialty of medicine (Libow, 1990).
While the 1965 passage of the Social Security Act Titles XVIII and XIX (Medicare and Medicaid) and the Older Americans Act represented enormous growth in programs and services for older adults, no federal dollars were committed to training geriatricians. In the 1970’s, significant strides toward geriatrics as a recognized element of medicine were made. By 1975, Dr. Robert Butler established the National Institute of Aging (NIA) as part of the National Institute of Health, and Dr. Leslie Libow began the first geriatrics fellowship and residency training programs in the country, at the Mt. Sinai School of Medicine. Also in the late 1970’s, the Senate Special Committee on Aging was granted permanent status, the first endowed professorial position in geriatrics was created at the Cornell-New York Hospital Medical Center, and the Institute of Medicine, led by Dr. Paul Beeson, made the first call for research to respond to the impending demographic imperative (Libow, 1990; Warshaw et al., 2002). Finally, in 1980, federal dollars came through the Health Resources and Services Administration to support training of geriatricians, including experiences within “academic nursing homes,” or, nursing homes in which residents from all medical specialties completed training (Libow, 1990).

In the 1980s and 1990s, geriatrics gained a surge in interest, attention, and effort by researchers, practitioners, and policymakers alike. Textbooks on the clinical principles of geriatrics became more widely available, as did fellowship programs. Funding from private philanthropies such as the Robert Wood Johnson Foundation became available to increase geriatric training; and prominent organizations such as the American Federation for Aging Research and the Alliance for Aging Research were established. In 1982, the first freestanding Department of Geriatrics was founded at Mt. Sinai Medical School in New York City. By 1989, 36% of Internal Medicine and 80% of Family Practice residency programs included geriatrics in the curricula, and the American Board of Internal Medicine and the American Board of Family Practice created the first certifying exam in geriatric medicine. In 1991, the first three Claude Denison Pepper Older Americans Independence Center were established by the NIA. This became the first of ten Pepper Centers in the nation, that conduct research focused on helping older adults remain as independent as possible. These centers are located exclusively on campuses with schools of medicine (Warshaw et al., 2002).
Geriatrics Today: The Imperative Looms

Today there are over 35 million Americans aged 65 years or older in the United States. Most of these older Americans have at least one chronic condition, and many experience more. The most common chronic conditions include hypertension (49.2%), arthritic symptoms (36.1%), heart disease (31.1%), and cancer (20%). Approximately 22% have a height and weight that qualifies them as obese. In 1997, 54.5% of older adults had at least one disability (physical or nonphysical). Of these adults, 37.7% reported at least one disability categorized as “severe.” Those who were older than 80 years had a higher rate (73.6%) of having one or more disabilities than their younger counterparts, and 57.6% of these individuals reported at least one severe disability (AoA, 2003).

The sheer numbers of older adults with chronic diseases or disabilities is expected to increase in the coming years, even using the most conservative projections (Applebaum & Kunkel, 1992). As disability and the presence of chronic conditions are among strong predictors of health care utilization (CDC, 2004), the health care industry will undoubtedly experience an increase in utilization rates by older adults in the future. As discussed above, geriatricians are specifically trained in the management of these and other conditions commonly faced by elders. Therefore, as greater numbers of older adults begin to require care, more geriatricians will be needed to provide this care. But will there be geriatricians available?

In 2002, there were approximately 7,600 certified geriatricians in the United States. Experts are in agreement that this number is already too low, as estimates indicate another 14,000 geriatricians are needed to fill current demands. This shortage is expected to worsen, with estimates indicating that over 36,000 trained geriatricians minimum will be needed by the year 2030, when 71.5 million elders are projected to be living (AGS & ADGAP, 2004). Out of 16,000 new physicians graduating from medical schools each year, less than 2% will pursue a career in geriatrics (ADGAP, 2003). Further, there are only 600 academic geriatricians in U.S. medical schools, falling short of the recommended 2,400 that are needed to train new geriatrics providers (AAR, 2002). Unless aggressive steps are taken immediately, quality and cost-efficient geriatric care for our aging society will be severely threatened.
Despite the establishment of organizations committed to geriatrics, the medical system has, overall, been resistant to the full integration of geriatrics into education and practice traditions. Expensive and life-threatening problems related to over-medication and under-diagnosis of conditions such as depression are among the most compelling evidence of this resistance. This is not surprising, given the historically slow integration of geriatrics in medical schools that has continued into the 21st century; although there has been some improvement and growth in geriatrics training, it has not been sufficient to meet the needs of older adults in the medical system. The urgency of the geriatric imperative is growing each year; in 2011, the baby-boomers will begin eligibility for Medicare, and will begin a wave of patients in need of geriatric care (AAR, 2002). If medical schools do not provide training in and encouragement to pursue opportunities in geriatrics, where will we find the next generations of geriatricians come?

Fortunately, leaders in geriatrics and medical education have recognized the growing urgency of the geriatric imperative, and have begun serious efforts to integrate geriatrics into undergraduate curricula and graduate residency and fellowship programs. However, these efforts have not come without resistance, and significant challenges still exist today. For example, many physicians and residents still hold ageist stereotypes against older adults; some faculty in medical education still question the validity of geriatrics as a specialty (personal communication, June 13, 2004). Many research studies occurred through the 1980s and 1990s concentrated on assessing medical students’ attitudes and interests toward working with older adults (e.g., Perrotta, Perkins, Schimpfhauser, & Calkins, 1981; Weiler, Orgren, & Olafson, 1989), yet only 2 medical schools in the country required undergraduate courses in geriatrics or gerontology, and only 15 schools had identifiable geriatrics departments, sections, divisions, or units in the 1980s (Zulman & Estes, 2003; AAMC, 2002). This has remarkably improved; preliminary data from 2002 showed that 56 schools of 125 had identifiable geriatrics units, with three having full Departments of Geriatric Medicine. Over 92% of schools teach geriatrics as part of a required course, but only 15% do so within a separate required geriatrics course (AAMC, 2002). Most medical schools also offer electives in geriatrics or gerontology, but with very low enrollment rates (for example, in 1992 only 2.9% of medical students enrolled in these electives) (Warshaw et al., 2002). Efforts
such as these must continue. As the population ages, the geriatric imperative continues to impinge upon the American medical system.
Chapter 3:  

**Addressing the Geriatric Imperative**

To ensure appropriate and high-quality health care for current and future older adults, more physicians trained in the complexities of geriatric care are necessary. Recruiting and training certified geriatricians is one clear approach to solving the geriatric imperative, but this has proven to be a great challenge. Indeed, the U.S. is already experiencing a shortage in geriatricians, as 20,000 are needed to care for elders and only 7,600 are currently practicing. A second approach involves training all physicians in some level of core knowledge and skills essential to caring for older adults. Because physicians in nearly all areas of medicine will experience an increase in older patients, training the “gerontological physician” is a logical strategy, but one not without obstacles. This chapter defines and explores these two approaches, and emphasizes the importance of undergraduate medical education (the first four years of formal medical education) as the first step in training the next generation of gerontological physicians.

The first strategy to respond to the geriatric imperative focuses on the explicit goal of training more geriatricians. Opportunities for physicians to become certified geriatricians began to grow in the 1980s. Fellowship programs in geriatrics grew, residency programs began to more fully integrate geriatrics curricula, and the first freestanding Department of Geriatrics was established at Mt. Sinai Medical School in New York. This energy continued through the 1990s, as 9256 geriatricians were certified by 1998. Despite continued growth and positive changes in fellowship, residency, and undergraduate curricula, the number of certified geriatricians dropped by 18% in 2002, as only 7,600 practicing geriatricians gained certification or recertification. Projections indicate that by 2004, actual numbers of geriatricians will have dropped by 34% from 1998 (Warshaw et al., 2002).

**Academic Geriatricians: A Necessary Link**

The U.S. medical education system is poorly prepared to recruit and train more geriatricians. One of the most significant reasons for this is a shortage of academic geriatricians. Physicians trained in both clinical and scientific research, academic geriatricians provide leadership in geriatrics within their institution, and teach geriatrics at various levels of education (ILC, 2002). Similar to the shortage of geriatricians who
are practitioners, an equally severe shortage of academic geriatricians currently exists. Research suggests that 2,400 academic geriatricians are needed, but only 600 are within U.S. medical schools. These geriatric academicians are needed to train providers, integrate geriatrics into medical practice, and develop standards of care for older patients (AAR, 2002). Dr. Robert Butler, a national expert in geriatrics, asserts that ten academic geriatricians at minimum should be employed within every medical school in order to improve the health and wellness of older adults (ILC, 2002). The shortage of academic geriatricians will worsen into the future if no strategic measures are taken. A shortage in this key group of educators will render impossible any efforts to significantly increase the numbers of practicing geriatricians.

**Barriers to the Field of Geriatrics**

The decrease in numbers of new geriatricians, coupled with low rates of enrollment in medical school geriatrics electives, low enrollment into and completion of geriatrics fellowship programs indicate that the strategies of the 1990s and early 2000s have not been successful in training enough geriatricians to meet the geriatric imperative. Experts have analyzed the resistance to geriatrics, and have identified several significant barriers. These experts are attempting to communicate these to the larger medical and gerontological community in efforts to inspire creative solutions. For example, Dr. Peter Boling, M.D. (2004), explicated a selection of the most salient barriers to a group of geriatric and gerontological educators in February of 2004. Organizations such as the American Federation of Aging Research and the American Geriatrics Societies have released reports including recommendations to address these important issues (AAR, 2002; AGS, 2004). Many of these barriers are the result of historically few geriatrics departments and centers within medical schools (there are only three full Departments of Geriatrics in allopathic schools today), and the shortage of academic geriatricians to train future geriatricians; other barriers are tied to social and political factors. A description of each barrier follows below.

**Inadequate Payment/Reimbursements**

Perhaps the most commonly recognized barrier to geriatrics is the conflict between the structure of geriatric practice and traditional medical practice payment systems. During
undergraduate and graduate medical schooling, most physicians incur large financial debt. The historically low reimbursement rates that geriatrics offers are a serious dissuasion for new physicians looking to earn high salaries early in their careers. In 2003, Medicare permitted a maximum amount of only $98 million to be spent on geriatric care; this constitutes only .04% of the total Medicare budget (Besdine, 2003). Low payments in geriatrics are based on three circumstances, closely related to the strong reliance that geriatricians have on the Medicare system. First, Medicare does not commonly provide coverage for assessments and care managements, the lynchpin aspects of geriatrics. Second, Medicare reimbursement rates are based on time spent with “average” patients. Due to the complex nature of geriatrics, geriatricians must spend longer periods of time with each client, and handle more intricate, multifaceted conditions compared to a physician seeing an “average” client. This is compounded by fee-for-service and managed care organizations, which encourage doctors to spend shorter amounts of time with a greater number of patients by reimbursing based on services rendered, rather than amount of time spent with each patient. Third, the long-term care facilities in which many geriatricians practices are discouraging, as low reimbursement rates, high malpractice premiums, and patients with multiple conditions are common (ADGAP & AGS, 2004).

Lack of Information on Opportunities and Rewards of Geriatrics

Medical students and residents are traditionally underexposed not only to geriatrics content in education, but also to the high level of personal reward and job satisfaction that geriatricians often experience. A lack of academic geriatrics leaders in medical programs results in limited opportunities for student exposure to research skills development and career opportunities in academic geriatrics. Students are also often unaware of the various non-academic career paths a geriatrician could take. These include jobs in clinical research, consulting, or development and administration of long-term care, managed care, or other organizations catering to older adults. If geriatricians,
both practicing and academic, are not in contact with students, these rewards and opportunities are hindered from becoming clearly identified or communicated (Estrine, 2001; AAR, 2002).

**Limited Experience with Healthy Elders** Medical students and residents have traditionally learned principles about aging in the context of death, disabilities, dementia, and depression. Any emphasis on the possibilities of intervention, health promotion, and disease prevention for older adults are minimized by negative stereotypes perpetuated by educators (Estrine, 2001). Training experiences in nursing homes and hospitals often paint a bleak picture of elders, and underemphasize the possibilities for practicing in other types of settings in which patients are healthier and more independent (Hought, 2002).

**Structure of the Medical Model** In addition to low reimbursement and payment structures for geriatric practice, the coordination and interdisciplinary approach crucial to geriatrics is also lacking in the current medical system. Older people experience multiple conditions, illnesses, and disabilities, with each impacting the other. A team of professionals including nurse practitioners, geriatric psychiatrists, specialists, social workers, therapists, pharmacists, and others often work in conjunction with geriatricians to ensure a multidisciplinary approach to care (AGS & ADGAP, 2004). As specialization and compartmentalization of medicine has become the norm, there is a lack of infrastructure to support the coordination within the medical system that geriatricians need. The “team approach” to geriatrics is unique; until the industry integrates this and other coordinating concepts into its system, the fragmented structure of medicine will continue to be a barrier to geriatric medicine (AAR, 2002).

**Ageist Attitudes Toward Older Patients** The denial of aging and the stigmas that often accompany conditions association with aging have
permeated the medical system. Beliefs that older patients require more time and are more difficult to treat have trickled down to students by the physicians who are their mentors and educators, in addition, there are perceptions that treating elders is futile because they are nearing the end of their lives (McCray, 1998; AAR, 2002; Hought, 2002). Research has shown that medical students perceive older patients as “dull, inactive, disagreeable, and economically burdensome,” (McCray, 1998, pg. 1035). Further studies indicate that the source of these negative perceptions and attitudes can come directly from attending physicians, residents, and house staff (Hought, 2002). If ageism persists in already-practicing physicians who are training students, this barrier will remain.

The above barriers represent some of the most critical reasons why the nation continues to face the geriatric imperative. Until efforts are taken to sufficiently remove them, the battle to recruit and train more certified geriatricians will remain undefeatable.

**Training the “Gerontological Physician”**

Rather than relying solely on increasing the numbers of geriatricians, another option to address the geriatric imperative is to train all medical students and residents in the core concepts of geriatric care. Expanding on recommendations made by organizations such as the International Longevity Center (2001) and the Alliance for Aging Research (2002), geriatric and gerontological education would be integrated into all levels of medical training, beginning in undergraduate medical school. During these first four years of education, all medical students would be trained in fundamentals of gerontology, or, the multidisciplinary exploration of the aging processes, including sociological, psychological, economical, political, and environmental aspects. In essence, this approach would train a cadre of “gerontological physicians,” doctors prepared to meet the imminently changing demographics of their patient base.

The gerontological physician is knowledgeable in the physiological and psychological changes associated with normal aging, including multiple-existing chronic conditions and disabilities, and is able to distinguish what is not part of
normal aging are necessary within all specialties of medicine. They have an awareness of the global factors influencing the aging processes, including socioeconomic, social, environmental, and emotional elements, rather than just an understanding of the pathologies associated with aging. Gerontological physicians are not necessarily board certified as a geriatrician, but understand the clinical and social aspects of older adults, and know how to navigate the health care system to best treat their patients (AAR, 1996; AAMC, 2002). These physicians would be able to effectively treat older adults, and also recognize when an elder should be referred to a certified geriatrician. Meaningful experiences in various clinical settings, exposure to older adults with all levels of health and independence, and an understanding of the options available in the long-term care system are among expert recommendations made for the training of all graduates of medical education programs (AAMC, 2002).

There is a strong case for training gerontological physicians when, in all specialties of medicine, the age distribution of patients and complexities of the aging processes are examined. First of all, older adults visit physicians more frequently than any other age group; age is directly related to frequency of office visits. For example, in 2001, 1500 visits were made by adults aged 75 years and older per every 100 adults of the same age; 1250 visits were made by adults aged 65-74 years per every 100 adults of the same age; 850 visits were made by adults aged 45-64 per every 100; and 700 visits were made by patients aged 0-24 years for every 100 of the same age (Cherry, Burt, & Woodwell, 2003). Second, when visits are broken down by age and medical specialty, older adults comprise an increasing proportion of all total visits as shown in Table 3.1. This indicates that students entering all specialties of medicine, with the exception of pediatrics, will treat an increasing percentage of older adults.

Experts in gerontology, geriatrics, and medical education have realized the need for universal training in medical schools and residency programs since the 1960s (e.g. Freeman, 1961; Somers, 1981), but action steps to accomplish these things have only begun to grow in popularity and volume since 2000. Although it is critically important to integrate strategies to train gerontological physicians at all stages of medical education, experts suggest that the earlier the experiences come, the more effective they will be.
Table 2:1  
Percentage of Total Visits To Medical Specialty Physicians By Older Adults (65 years or older) in 1981, 1991, 2000

(AAR, 1996; AAMC, 2002). Therefore, efforts to train the gerontological physician should begin as early as the first year in undergraduate medical school. Beginning early in medical education to dispel myths and provide fundamental knowledge about older adults and aging processes not only increases the success of these goals, but also encourages a learning environment that is free of the perpetuation of ageist stereotypes.

Medical schools are already beginning to take strides toward full integration of geriatrics and gerontology into the general curricula. The next section will describe these efforts, initiated through major national foundations and student-based groups that are targeting geriatrics education to undergraduate medical students.

Major Geriatrics Initiatives of Undergraduate Medical Education

AAMC/Hartford Foundation Geriatric Curriculum Grants Initiative

The John A. Hartford Foundation is a private philanthropy located in New York City. Established in 1929, the overall goal of this foundation is to “increase the nation’s capacity to provide effective and affordable care to its rapidly increasing older
population.” Through its granting program, the foundation specifically seeks to “enhance and expand the training of doctors, nurses, social workers and other health professionals who care for older adults, and promote innovations in the integration and delivery of services for all older Americans.”

In 2000, the John A. Harford Foundation and the American Association of Medical Colleges (AAMC) collaborated to develop an initiative focused on enhancing the gerontological and geriatric curricula at medical schools around the country. The central goals for this project included the encouragement of more medical students to consider geriatrics as a career path, and to give them more exposure to older patient, and the unique needs that they possess. With monies administered by AAMC, two rounds of proposals for initiative dollars were accepted. In 2000, during the first round of grants, 76 proposal applications were received, out of the 125 medical schools in operation. From these, 40 medical schools were awarded two-year funds totaling $100,000 in 2001. Due to the high response rate, the Hartford Foundation doubled the amount of funding to AAMC in 2002, and requested a second round of grants. Twenty additional schools were supplied with $100,000 (Frase-Blunt, 2003).

Medical schools that applied for funding were required to submit a proposal detailing the creation and implementation plan for an integrated curriculum required for all undergraduate medical students, continuing throughout all four years of training (Frase-Blunt, 2003). Proposals were considered based on the purposes of the initiative, which included innovation on the topics of gerontology and geriatrics, broad dissemination of the curriculum development and implementation, and plans for the medical school to conduct internal evaluations of the curriculum. Most of the funded schools developed experiences that were integrated into exciting coursework, rather than establishing independent geriatric clerkships (Warshaw et al., 2002).

When the initiative was conceptualized, the creators wanted to set clear goals and purposes for the proposals, but with enough opportunity for programs to express innovation and creativity. Responding to this call, medical schools developed programs including partnerships with long-term care organizations, community outreach programs, and student-led educational programs for older adults. At the University of Missouri-Kansas City School of Medicine, medical students are paired with an elder from a local
retirement community. The elder becomes the “mentor on aging” to the student, and, throughout several semesters, the pair meet regularly. This particular program focuses on exposing medical students to the processes of “normal aging,” and training them to recognize and treat not only biological, but psychosocial and environmental factors as well (Frase-Blunt, 2003). The Ohio State University College of Medicine and Public Health developed and implemented a similar pairing program in 2000.

The Medical College of Wisconsin also received funding from the AAMC/Hartford initiative. Each medical student in this program is assigned to a “fictional patient” during their first year, who is independent and generally healthy, with a few complications such as diabetes or hypertension. As the students move through their education, the fictional patients ages, developing more severe health conditions and facing increasingly difficult environmental or social experiences. The College believes this helps students to recognize and appreciate the system of care in geriatrics and gain exposure to interdisciplinary approaches (Frase-Blunt, 2003).

**Donald W. Reynolds Foundation Initiative**

The Donald W. Reynolds Foundation is located in Las Vegas, Nevada. Established in 1954 by a successful media entrepreneur of the same name, the Foundation is currently one of the largest private foundations in the nation. The Foundation funds projects related to aging and the quality of life, entrepreneurship, journalism, and other local interests.

In 2000, the Donald W. Reynolds Foundation launched a major funding initiative to grant monies to medical schools in efforts to boost the geriatrics training opportunities for their medical students, residents, and physicians. The fundamental goal and challenge for recipients of the award is to increase physicians’ overall knowledge of the clinical conditions and unique issues faced by older patients. During the first funding cycle that kicked off in 2001, ten four-year grants totaling approximately $2 million each were awarded to medical schools throughout the country. Due to success and large interest in the program, a second cycle of funding was approved, and ten more schools were awarded grants totaling $20 million. The Foundation is expected to fund a third round of grants in November, 2004 (Warshaw et al., 2002; www.dwreynolds.org, 2004).
When the first call for proposals was issued, two key factors were considered when choosing awardees: innovations that ensured continuous, valuable influence on medical programs that did not currently have strong student or residency geriatrics training strategies, and initiatives that trained future physicians on the biomedical aspects of aging, geriatric assessment, and care coordination, and management of the unique clinical and special conditions faced by frail elders. Those programs chosen for funding during the first round utilized many innovations ranging from integration of clinical and scientific geriatrics content into existing curricula, to high-technology teaching modules (Warshaw et al., 2002). For example, the University of Michigan instituted mandatory geriatrics clinical experiences, and developed a web-based “geriatrics portfolio” program, in which each medical student documents all geriatric training and experiences (www.med.umich.edu, 2001). At the University of Iowa, a web-based “Geriatric Virtual Hospital” was designed to allow digitized lectures, and make available web-based information and support aides related to geriatrics (www.uhealthcare.com, 2001). Virginia Commonwealth University integrated over 60 hours into the required undergraduate medicine curricula, and developed interactive web-based case scenarios with which all students work (www.vcu.edu, 2001).

Programs funded during the second round continued the tradition of curriculum integration and innovations with strategies including web-based training, multidisciplinary education, and case-based learning related to geriatrics and gerontology (http://www.dwreynolds.org/).

Due to the recency of these initiatives, conclusive data about the successes of the funded programs are not available. However, two reports from the AAMC discuss preliminary data from a 2002 survey administered to medical students. These data show an increase in confidence expressed by graduating medical students from schools participating in the Hartford program in their knowledge of geriatrics (AAMC, 2003; Cohen, 2004). Table 3.2 demonstrates this increase, suggesting that medical schools funded through the Hartford Foundation produced graduates who were more trained in geriatrics than graduates from non-funded schools. This survey will be continuously used to track the successes of the Hartford Initiative as perceived by graduating seniors (AAMC, 2000).
Table 3.2: Improvements in Geriatric Education Satisfaction Among Hartford Funded Schools and Non-Hartford Funded Schools

The implications of all the initiatives suggest that undergraduate medical students will benefit not only from the increased integration of geriatrics into their curricula, but also by the increased involvement of educators in geriatrics. The education process of geriatrics overall also stands to benefit, as new innovative models are tested and disseminated. The increasing trend toward infusing of geriatric content rather than the creation of stand-alone geriatrics courses is also seen as an advantage by geriatric experts. Integrating geriatric content avoids the displacement of existing courses that development of stand-alone courses requires, and also ensures a greater awareness and sensitivity to aging issues by both students and faculty (Warshaw et al., 2002).

Student-Based Geriatric Interest Groups and Opportunities

Organizations across the country sponsor many geriatric and gerontological interest groups and programs for undergraduate medical students. Generally, these groups facilitate and sometimes fund educational and experiential opportunities for
students. Of particular interest are the American Federation for Aging Research (AFAR) Medical Student Geriatrics Scholars Program, the American Geriatrics Society (AGS)/Boston University Summer Institute in Geriatrics, the American Medical Student Association’s (AMSA) geriatrics interest group, and AGS student chapters. These groups evolved from the geriatric imperative voiced by numerous researchers, practitioners, and organizations alike, to implement strategies that will encourage and facilitate medical students to pursue training in geriatrics, and complement the curricular changes made by medical schools.

The Medical Student Geriatrics Scholars Program began in 1994 by the American Federation for Aging Research, with funding from the John A. Hartford Foundation and the Fan Fox & Leslie R. Samuels Foundation. This program funds medical students for eight- or twelve-week experiences in clinical and academic geriatrics research. Four research centers serve as host sites for this program, including Harvard Medical School, Mount Sinai College of Medicine, UCLA School of Medicine, and Weill Medical College of Cornell University. AFAR program staff is responsible for placement assignments of chosen students. A number of medical schools in the nation also accept their own students to train under this program. Participants receive mentorship, and clinical and didactic training from leading experts in geriatrics and/or gerontology. Participants are also required to become involved with a research initiative related to the care of older adults, and complete a journal-format paper based on this research. Students receive $4,000 to participate in this program. Since its inception, over 700 medical students from more than 80 medical schools have participated in this program (AFAR, 2004).

The American Geriatrics Society and Boston University co-sponsor an annual five-day opportunity for third- and fourth-year medical students to learn about and consider careers in geriatrics and geriatric research. The Summer Institute in Geriatrics began in 1986, and has continued to attract nationally recognized academic geriatricians and gerontological researchers. Activities typically include lectures, seminars, case discussions, and site visits related to gerontology and geriatrics (AGS, 2004). The Institute did not occur in 2002, as curricula was revised and updated to adapt to the increased geriatrics background with which participating students were coming.
(Warshaw et al., 2002). Full funding for attendance is available to eligible students. Twenty participants were admitted into the Summer Institute in 2004.

In 1950, the American Medical Student Association (AMSA) was founded to provide students with the opportunity and vehicle to participate in the larger context of organized medicine. Now with over 300,000 members, including medical students, residents, interns, and pre-medicine students, the organization is a student-governed body that promotes education and advocacy for physicians-in-training. AMSA currently focuses on five main strategic issues: universal healthcare, disparities in medicine, diversity in medicine, leadership development, and culture transformation in medicine. Ten specialty focus and interest groups are sponsored within the organization, including one solely focused on geriatrics. As members of this specialty focus group, students have access to a listserv, and extensive information online. The extensive website includes content on the practice of geriatrics, interviews with geriatricians, educational and informative resources, and reasons to consider geriatrics training and career choices. Current membership rates for medical students are $65 for 5 years, or $45 for 3 years (AMSA, 2003; Warshaw et al., 2002).

The Ohio State University hosts an AMSA Geriatrics Task Force on campus. Each year, this group hosts a variety of events both on campus and throughout the community, including informational meetings, guest speakers, panel discussions, and a community outreach program. In the Student/ Older Adult Community Outreach Program, medical students visit the home of a community-dwelling older adult and spend time helping out with household chores. Both student and elder participants attend a luncheon in the afternoon, during which they share thoughts and experiences from the day. The Task Force is closely connected to faculty in the Office of Geriatrics and Gerontology (OSU Geriatrics Task Force, 2002).

The American Geriatrics Society (AGS) recently began sponsoring student chapters on the campuses of national medical schools. Geared to encourage student interest in geriatrics among students, each campus chapter is provided $200 annually to support members. While the function and activities of individual chapters vary among campuses, the overarching goals include the encouragement of interest in geriatrics among students and faculty, the encouragement of general and elective geriatric
curriculum development, the development educational geriatrics programs open to medical school affiliates and health care practitioners in the community, and promoting activities among the larger community, including long-term care organizations and other relevant settings (Warshaw et al., 2002). The AGS Student Interest Group at the Northeastern Ohio Universities College of Medicine (NEOUCOM) works closely with the Office of Geriatric Medicine/Gerontology to coordinate events that communicate the integral role of geriatrics in other disciplines; foster positive attitudes towards aging; enhance geriatric and gerontological skills, knowledge, and attitudes of medical students; and encourages interaction between students and faculty mentors involved in geriatrics. Notable events include celebrations at senior centers, intergenerational softball games, and educational speakers open to students and the public (NEOUCOM Geriatric Student Interest Group, 2004). Benefits of student membership also include notifications of relevant content at the annual meeting of AGS, access to a website with geriatrics-related information and resources, and a student discussion board. Membership dues of AGS are $35 annually for medical students (AGS, 2001).
Chapter 4:

Using Secondary Data to Examine National Trends in Geriatrics Education

The first three chapters of this report provided an overview of important trends in geriatric medicine and medical education, based on printed reports and funding initiatives in geriatrics and education in national medical programs. To further understand the trends in geriatric education, information from the American Association of Medical College’s Graduate Questionnaire (GQ) All Schools’ Reports will be analyzed. Information extracted from these GQ reports illustrates the trends in undergraduate medical students’ experiences with and perceptions of geriatrics training, including students’ future plans in geriatrics. Trends and current snapshots from the GQ reports provide a perspective of the evolution of geriatric training in medical education. Information about the major funding initiatives in the field provides depth of the greater context within which the growth in geriatrics has occurred.

The secondary data analysis was performed using the AAMC Graduate Questionnaire All Schools’ Reports from 1978 to 2003. Because raw data from the questionnaire is not publicly available, the All Schools’ Reports were utilized for analysis; these reports provide extensive numerical and percentage trends that are useful in answering the main research goals of this project. These goals include describing the national trends in undergraduate medical education, from the medical student perspective.

The AAMC Graduate Questionnaire (GQ)

The GQ is a questionnaire administered to all graduating medical students in the United States. First administered in 1978, this tool has been used to obtain input from students about medical education issues, which the AAMC and schools of medicine can use when forming priorities, developing programs, and create policies. The questionnaire focuses around critical issues for students and educators, including preparation for residency and future practice, opportunities to explore a variety of interests and experiences, the importance of finances on current and future career activities, and negative experiences while in medical school. In 1999, the GQ was changed from paper-and-pencil to a web-based format, to improve data collection and analysis. The survey takes approximately 40 minutes to complete, and is highly confidential. Although it is not required, both medical schools and the AAMC strongly encourage all graduating
students to complete the GQ. The response rates have climbed since its inception; 54% of all graduating students respond to the GQ in 1978, 65.2% in 1988, 88% in 1998, and approximately 90% in 2003 (AAMC, 2004).

Methodology

Various annual editions of the AAMC GQ All Schools’ Reports were reviewed for content related to geriatrics in medical education. Relevant questions were sorted into two categories: student assessment of geriatrics training in medical school, and student reports of future plans related to geriatrics. Questions in the first category presented information on enrollment in geriatrics electives, perceived adequacy of geriatrics content in coursework and clerkships, and a comprehensive perception of strategies used to teach geriatrics holistically. The second category contains questions related to trends data on students intending to choose geriatrics as a subspecialty and as main area of practice, and when these decisions were made.

For each question, I entered the response patterns into an Excel spreadsheet for all years of the questionnaire in which the question appeared. I then graphed the data to create a visual representation of the trends for each question. Major trends are as follows:

- Overall increasing trend for students to report adequacy in geriatric content and training within medical education from 1978 to 2003
- Overall increase in percentage and number of respondents seeking training experiences in geriatrics
- Short-term trend in increased levels of confidence in geriatric/gerontological knowledge and skills

One weak trend was also observed in the GQ data.

- Increasing trend for students to include geriatrics in future career plans from 1987 to 1996

Results

Trend #1: Increasing Adequacy of Geriatrics Training and Content From the Student Perspective

The first question assessing student perceptions of geriatrics in medical education appeared on the GQ in 1979, when respondents were asked to indicate the appropriateness of emphasis placed on “care for the elderly.” Since 1979, changes in
both the wording of the question and response categories have occurred, but the GQ has consistently included questions assessing general student perceptions of geriatrics training. From 1979 to 2003, there has been an overall, sustained increase in the percentage of respondents who rate geriatrics training in medical school as appropriate or adequate. This is most clearly demonstrated in data from 1981 to 1996, when respondents were asked to indicate whether they felt emphasis on care of the elderly was excessive, appropriate, or inadequate. As seen in Graph 4.1, the percentage of students indicating inadequate emphasis decreased steadily, from approximately 40% of all responses in 1981, to just over 20% of all responses in 1996. Concurrently, the percentage of respondents indicating appropriate emphasis increased from 60% in 1981 to 73% in 1996. This trend changed in 1998, as the GQ reported a drastic decrease in

Graph 4.1

% of Respondents Who Percieved "Care of Elderly" Training as Excessive, Appropriate, or Inadequate, 1981-1996

indicating inadequate emphasis decreased steadily, from approximately 40% of all responses in 1981, to just over 20% of all responses in 1996. Concurrently, the percentage of respondents indicating appropriate emphasis increased from 60% in 1981 to 73% in 1996. This trend changed in 1998, as the GQ reported a drastic decrease in
students assessing time devoted to geriatrics as appropriate, and a simultaneous increase in students indicating inadequate time devoted to geriatrics (See Graph 4.2).

Graph 4.2

% of Respondents Indicating "Time Devoted to Geriatrics Training" as Excessive, Appropriate, or Inadequate, 1997-2000 & 2003

However, subsequent years saw resurgence in respondents’ assessments of time devoted as adequate, a trend which steadily increased.

Further evidence of this trend appears in recent assessments of geriatrics and content in undergraduate clinical experiences. In 2001, the GQ began to include questions asking respondents to indicate the adequacy of geriatrics and gerontology content in each of five clinical clerkships: Internal Medicine, Family Medicine, Surgery, OB/GYN, and Psychiatry. When asked to agree or disagree with the receipt of adequate geriatrics/gerontology content, respondents choosing either “Strongly Agree” or “Agree” have increased from 2001 to 2003 in all clerkships except OB/GYN. Additionally, again in all clerkships except OB/GYN, percentages of respondents who answered with “Strongly Disagree” or “Disagree” have decreased. An example of this trend is shown in
Many historical events are consistent with this trend in medical education. For example, the 1980s experienced an increase in the number of geriatrics textbooks published in the United States, as well as the establishment of the first freestanding Department of Geriatrics at Mt. Sinai Medical School. Fellowship and residency opportunities in geriatrics also began to flourish through the 1980s, and aggressive efforts to strengthen geriatrics within Family Practice and Internal Medicine also began. Programs such as the Institute of Medicine’s Centers of Excellence, and Pepper Centers funded through National Institute on Aging were also established in the 1980s and 1990s (Warshaw et al., 2002). The combination of these endeavors created a greater awareness of geriatrics in the field of medicine, and more opportunities to become exposed to and pursue research or clinical experiences in geriatrics for students.
Trend #2: Increasing Numbers of Students Pursuing Experiences in Geriatrics

Items detailing rates of participation in elective, non-required experiences related to geriatrics have been consistently included on the annual GQ. Analysis indicates that there has been an overall trend of increasing percentages of students who participate in these experiences. For example, Graph 4.4 shows the percentages of respondents who enrolled in a non-required geriatrics elective. Here we can see a very steady increase of respondents who enrolled in at least one geriatrics elective from 1978 to 1984. The timing of this increase is consistent with the development of new funding for research in geriatrics and accelerated growth in academic nursing homes used in geriatrics education in the early 1980s (Warshaw et al., 2002). These events required new geriatrics faculty into the medical education system, thereby potentially increasing the opportunities to develop and teach geriatrics electives for undergraduate medical systems.

As shown in the graph, the increasing trend remained sustained through 1995, despite experiencing some periods of slight decrease.

Graph 4.4

% of Students Taking A Geriatric Elective During Undergraduate Medical Education, 1978-1995

<table>
<thead>
<tr>
<th>Year</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>0.5</td>
</tr>
<tr>
<td>1979</td>
<td>0.5</td>
</tr>
<tr>
<td>1980</td>
<td>1</td>
</tr>
<tr>
<td>1981</td>
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Another example of respondents increasingly pursuing experiences in geriatrics is demonstrated by the trend of students participating in non-required activities within home and nursing home care. Although not explicitly designated as a geriatrics experience, the nature of home care and nursing home care are such that it can be inferred that participating students would have been exposed to significant concepts and practices related to care of older adults. From 1996 to 2000, as shown in Graph 4.5, participation in both nursing home and home care field experiences grew from approximately 19% to 42%.

Graph 4.5

In 2001, both dramatically decreased to 25%, where participation remained steady through 2003. Nearly all other non-geriatrics-related experiences also experienced significant decreases between 2000 and 2001. More research is needed to explore possible changes in the medical education system that could have influenced this trend. Overall, field experiences in nursing and home care have demonstrated an increasing trend when viewed comprehensively from 1996 to 2003.
Trend #3: 3-Year Increase in Levels of Confidence in Geriatrics Knowledge and Skills

A section of items were added to the GQ in 2001, asking respondents to indicate level of agreement to statements pertaining to gaining knowledge and skills relevant to geriatrics. Items included:

- I learned about the health care needs of healthy older adults during my medical training
- I am well prepared to care for older adult patients in acute settings
- I am well prepared to care for older adult patients in ambulatory settings
- I am well prepared to care for older adult patients in long-term health care settings
- I was exposed to expert geriatric care by the attending faculty of my medical program
- Geriatric/gerontology education was part of all four years of my medical education
- Small group exercises were used to increase my knowledge of geriatrics
- Interdisciplinary approaches were used to increase my knowledge of geriatrics

With the exception of one item, (geriatrics/gerontological content in all four years of medical schools), the percentage indicating strong or general agreement heavily outweighs the percentage of those disagreeing. Additionally, from years 2001 to 2003, the percentages of respondents indicating agreement have steadily increased, while those disagreeing have steadily decreased. Graphs depicting these trends are included in Appendix C.

For the item assessing geriatrics content in all four years of medical education, there is a trend of increasing agreement between 2001 and 2003. However, the majority of respondents consistently indicate strong or general disagreement with the statement. This gap is closing, however, as in 2003 41.1% of respondents either disagreed or strongly disagreed compared to 40.1% who either agreed or strongly agreed that geriatrics and gerontology were included during all four years of training (see Graph 4.6). These results suggest that medical schools are increasingly adopting full integration
of geriatrics and gerontology into all four years of training, a strategy highly recommended by experts in medical education and geriatrics. Since major geriatrics funding initiatives were started in medical schools in 2000, it is logical that graduating medical students in 2003 would have the narrowest gap between those who agree and disagree. Responses to this item should reverse in coming years, as future cohorts taking the GQ will have been increasingly more likely to have experienced these initiatives focused on comprehensive integration of geriatrics into undergraduate curriculum. Schools without such initiatives, however, still have room for improvement in full integration.

The inclusion of this new section of items on geriatrics is important in two ways. First, it implies a growing awareness by the AAMC of the need to train undergraduate medical students comprehensively in geriatrics and gerontology (indeed, to train the gerontological physician). This also implies recognition that these efforts have been launched at meaningful levels across the country, and as such, that the assessment of student perspectives is necessary. Inclusion of the new question coincides with the recent undergraduate medical education initiatives launched by programs such as the Reynolds and Hartford Foundations, and the increasing popularity of special student-based interest
groups in geriatrics. Second, the response trends show that cohorts of graduating students that are increasingly confident in their geriatrics background. The potential impact of this trend can be positive or negative. For example, students may feel confident with the training they already have had in undergraduate medical education, and decide that they do not need further information or training opportunities. This overconfidence could prevent these students as residents or fellows from enrolling in special geriatrics courses or events. If the goal is to train gerontological physicians, creating too much confidence in undergraduate medical school could actually be a barrier in the achievement of this goal. Conversely, the increase in confidence may spark new interests to pursue opportunities and experiences in geriatrics that otherwise students may not have sought out, thereby strengthening the abilities of new gerontological physicians.

Trend #4: Weak Increase in Numbers of Students Intending to Pursue Geriatrics in Future Careers

There is a trend in GQ data showing that a small, but increasing proportion of respondents planned to include geriatrics as a subspecialty or practice concentration. This is most prevalent for respondents pursuing a career in internal medicine. Of the respondents who decided on a career in internal medicine with a specialty, an increase from .4% to 1.5% in students deciding on geriatrics was seen from 1987 to 1996. While the percentage considering geriatrics is still small, the increase is notable.

This trend is also present in respondents deciding on careers in family practice. From 1991 to 1996, there was an increase from 1.3% to 1.7% among respondents interested in family practice who planned on becoming certified in geriatrics. In addition, an increasing percentage of those undecided about a subspecialty indicated geriatrics as their first choice (increasing from .8% in 1991 to 1.6% in 1996). The trend of respondents that indicated geriatrics as intended field of practice remained constant at a very low percentage; the percentage from 1990 to 1996 has hovered between .3% and .2% of respondents. This low, flat trend speaks to the prevailing shortage of geriatricians entering the workforce.
Chapter 5:
Conclusions

The geriatric imperative calls for creative and far-reaching changes in medical education, alerting us to the need for physicians trained in the complexities of aging. This report describes the historical context within which the field of geriatrics has evolved, and two possible responses to the geriatric imperative are discussed, including the recruitment of more certified geriatricians and training all medical students to become gerontological physicians, beginning in undergraduate medical education. Major initiatives supporting this second strategy are also described, with many examples of innovative programs preparing students to become gerontological physicians and geriatricians. Finally, an analysis of the AAMC Graduate Questionnaire (GQ) All Schools’ Reports helps us understand historical trends in student perceptions of the education and training experiences they have received in undergraduate medical education.

The trends in the GQ are generally consistent with developments in medical education related to geriatrics. The 1970s and 1980s brought increases in geriatrics teaching material, strength in geriatrics fellowships and residencies, and development of new initiatives and positions geared to recruit more geriatricians; the GQ reports revealed a parallel increase in respondents confirming the adequacy of their geriatric and gerontological education. Despite a trend indicating increased pursuit of geriatrics education and experiences, there remains little growth in numbers of respondents intending to become certified geriatricians. However, as recent GQ reports show an increase in confidence in geriatrics and gerontological knowledge and skills, we can imply at least some level of success in the initiatives such as the Hartford and Reynolds program aimed at training the gerontological physician.

Although a direct link between student perceptions of geriatrics training and the preparedness of future physicians to appropriately care for older adults cannot be made, this trends analysis is an important step in reviewing historically what the medical system has done to address the geriatric imperative. The analysis also confirms that very few students have planned to become certified in geriatrics—one of the most the most critical
elements of the geriatric imperative. The persistent low interest in geriatric board
certification strengthens the argument for medical schools to train gerontological
physicians. First, as more experiences in geriatrics have become available, students have
increasingly enrolled in them and perceived the experience as adequate. This suggests
that these experiences have potential to reach all medical students and provide them with
an initial core knowledge and skill set to become gerontological physicians, even if they
do not seek future certifications in geriatrics. Second, these experiences have the
potential to inspire more students to pursue a career as a certified geriatrician; more
geriatricians will still be necessary even with a future workforce of gerontological
physicians. However, the strong barriers present in the field of geriatrics must also be
analyzed and overcome to encourage more physicians to become certified geriatricians.
Training both the gerontological physician and the geriatrician to work together is a
strong strategy to provide appropriate and effective health care to older adults. The
gerontological physician understands the complexities of the aging processes, treats elder
patients appropriately, and recognizes when a referral to a geriatrician is necessary.

Efforts to train gerontological physicians will fail unless educators confront their
own ageist stereotypes and attitudes and also those perpetuated by the medical system.
Research has suggested that students often adopt ideas and misconceptions of older adults
from persons directly involved in their training (Hought, 2002). This suggests that the
actual structure of the medical education system may perpetuate resistance to
gerontological and geriatric training. Further research examining this macro-level
concept is critical in further identifying sources, training experiences, and curricula
content that contribute to meeting the geriatric imperative. Before changes are made at
the student level to train gerontological physicians, it is essential to understand the
structures in place within the medical education system that can undermine them.

Research investigating the direct link between the economic implications of
geriatric care is also instrumental in addressing the geriatric imperative. Finding
empirical evidence of cost savings resulting from geriatric and gerontological care could
encourage policy-makers and the health care system to make changes to Medicare and
the medical educational system. These changes would be targeted at breaking down the
barriers discussed in this report; many recommendations to accomplish this have already
been published by various organizations and experts (e.g., AAR, 2002; Zulman & Estes, 2003; and AGS & ADGAP, 2004). The most common of these recommendations is reform of the medical reimbursement system and educational programming.

Empirical research is also needed to investigate the influence of these recommendations on the future corps of gerontological physicians and geriatricians. For example, recommendations that encourage a loan forgiveness program for physicians entering into practicing or academic geriatrics (AAR, 2002) could be pilot tested. This could be followed with an analysis of the numbers of physicians choosing geriatrics in the subsequent years after graduation, and interviewing these geriatricians about the influence of medical school debt on their choice of specialty. Additionally, evaluation research could also be used in medical schools to investigate how well the programs funded by the Hartford and Reynolds foundations succeed in training gerontological physicians. This could be accomplished through the use of qualitative focus groups and in-depth interviews with students, faculty, and staff involved in the project, and through a comparative design that evaluates schools with innovative programs compared to evaluations of schools without them. Finally, a longitudinal study would be useful to track students graduating as gerontological physicians and their patients, to explore how they practice medicine with older patients, how they perceive their abilities to understand and treat the complexities of older patients, and the economical benefits or hardships related to caring for older patients.

As the geriatric imperative continues to grow in strength and urgency, the American medical system must take great strides to ensure the work force is prepared. Recruiting more geriatricians, as well as training every doctor as a gerontological physician are among the most important strategies to ensure high-quality, appropriate health care for older adults. To do this, many barriers must be overcome, including a prevalent sense of ageism in the medical community, and changes in the reimbursement structures for those practicing geriatric medicine. Innovative programs at the undergraduate medical level should be undertaken by all schools, in the spirit of the programs currently funded by national initiatives. Continued evaluation of these programs is critical, to ensure an evolution of the curricular structure and content in order to best meet the needs of students and their older patients.
There is ample evidence that the medical educational system is recognizing the geriatric imperative and attempting to bridge the structural lag existing within. With continued leadership from national experts in geriatrics, gerontology, and medical education, there is hope that a new work force of strong minds and gentle hands will be ready to treat the complexities of an aging America.
References


Appendix A
Web-Based Resource Guide to National Initiatives and Student Groups in Geriatrics

The following links provide further information on the organizations described in Chapter 3.

- The John A. Hartford Foundation: http://www.jhartfound.org

- The Donald W. Reynolds Foundation: http://www.dwreynolds.org

- The American Federation for Aging Research: http://www.afar.org/medstu.html

- Student section of the American Geriatrics Society:
  http://www.americangeriatrics.org/education/geristudents/index.shtml

- American Medical Student Association: http://www.amsa.org/
Appendix B: Supplemental Graphs for Chapter 3

Additional Graphs Supporting Trend #1:

- **2001 Adequacy of Geriatrics Covered in Medical School**
  - Agreement of Explicit Coverage
  - % of Respondents Indicating Agreement of Explicit Coverage of Geriatrics in Years 1 & 2, and Clinical Experiences, 2001
  - Graph shows distribution of responses by level of agreement: Strongly Agree, Agree, No Opinion, Disagree, Strongly Disagree.

- **2002 Adequacy of Geriatrics Covered in all 4 Years of Medical School**
  - Level of Agreement
  - Graph shows distribution of responses by level of agreement: Strongly Agree, Agree, No Opinion, Disagree, Strongly Disagree.

Graphs illustrate trends in respondents' perceptions over time.
Additional Graphs Supporting Trend #3

% of Respondents Indicating Perception of Adequate Geriatrics/Gerontological Content in Surgery Clerkship

% of Respondents Indicating Perception of Adequate Geriatric/Gerontological Content in Psychiatry Clerkship
% of Respondents Indicating Perception of Adequate Geriatric/Gerontological Content in Family Medicine Clerkship

% of Respondents Indicating Perception of Adequate Geriatric/Gerontological Content in OB/GYN Clerkship
% of Respondents Indicating Agreement: Interdisciplinary Approaches

Interdisciplinary approaches were used to increase my knowledge of geriatrics.

% of Respondents Indicating Agreement: Small Groups

Small group exercises were used to increase my knowledge of geriatrics.
I was exposed to geriatric care by the attending faculty of my medical program.

I am well prepared to care for older adult patients in long-term health care settings.
% of Respondents Indicating Agreement: Ambulatory Settings

I am well prepared to care for older adult patients in ambulatory settings.

% of Respondents Indicating Agreement: Acute Settings

I am well prepared to care for older adult patients in acute settings.
I learned about the health care needs of healthy older adults during my medical training.
Additional Graphs Supporting Trend #4

% of Respondents Deciding on Geriatrics as a Subspecialty of Family Practice, 1991-1996

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% of Students Indicating Time of Specialty/Subspecialty Choice As: Before Medical School, 1st Year, 2nd Year, 3rd Year, 4th Year, Undecided, No Plan to Specialize, and No Response, 1988-1990

Year | Before Med School | 1st Year | 2nd Year | 3rd Year | 4th Year | Undecided | No Plan to Subspecialize | No Response |
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