



Demographics: Who Cares!!
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Introduction

Improved life expectancy and decreased mortality from age-related disorders continue to increase that portion of the surgical patient population considered old. This unit forms the first part of a series of modules dealing with “Anesthesia for the Elderly.” It will guide you in a step-like fashion through the demography of the aged population. Facts will be introduced to you, and you will be asked questions testing your mastery of the information. Each section is self-contained and leads to the next. One should not progress until one has fully understood the material in the previous section.

After reading this handout and attending the accompanying class, the resident should be able to understand:

- The concept of aging
- How the elderly will constitute an increasing proportion of the US population in general, and Florida in particular
- Why it is important for us as anesthesiologists to have some understanding of these trends, in terms of the patients we anesthetize, outcomes, and health care planning

What is Aging?

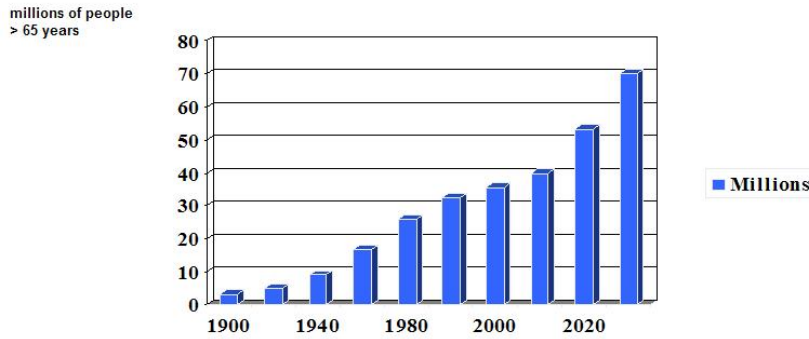
A progressive, universally prevalent biological process that produces structural changes that results in decremental physiological alteration. There are many ways of marking the start of this progression, including:

- Biological — end of reproduction
- Social — retirement, age 60 to 65 years, eligible for Social Security, Medicare, AARP
- Psychological

However, the commonly used working definition is the retirement age, which now stands at 65 years for those born in 1937 or earlier.

Facts

The number of people age 65 years and older has more than tripled in the last 100 years, and this group now constitutes 12% of the population (Figure 1).



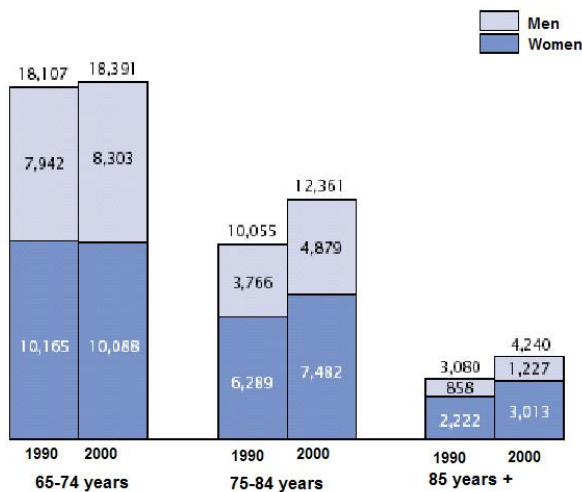
Data from AARP and US Dept. of Health and Social Services. A Profile of Older Americans, 1994

Figure 1. Increased number of elderly in the US population in the last 100 years

It has been estimated that by the year 2040, the number of people over the age of 65 years will again double.¹

This increase is not uniform even within population groups. The “oldest old” are the fastest-growing segment of the elderly population (Figure 2). The portion of the population over 85 years old increased by 38% between 1996 and 2000.

Population 65 Years and Over by Age and Sex: 1990 and 2000
 (Numbers in thousands. For information on confidentiality protection, nonsampling error, and definitions)



Source U.S. Census Bureau. Census 2000 Summary File 1; 1990 Census of Population, General Population Characteristics, United States (1990 CP-1-1)

Figure 2. Increases in sizes of various age groups in the United States

Question:

Intuitively, do you think that the surgical risk in this “oldest-old” group is greater?

The answer is **YES**.

Although this discussion belongs in a later unit, I thought that this point illustrates why it is important to have some understanding of these demographic facts. The United Kingdom has a reporting system called the National Confidential Enquiry into Post Operative Deaths (NCEPOD). One such enquiry looked at the elderly; in fact, it was focused on patients greater than 90 years old. We will not go into the details of this document. What is interesting is that the authors noted that the life expectancy of those over 90 years old in the United Kingdom in 1996 was 3.6 years for males and 4.5 years for females. They comment that because of these statistics, some deaths will occur coincidentally with surgery.

It is the recognition that this age group constitutes an ever-increasing segment of the surgical population and with it an ever-increasing risk that is important.

“The elderly are more vital than before. Americans can afford to grow old. And they will grow old gracefully.”² — Christopher Farrell

Since Americans are now living longer, the age of the oldest segment of the population has steadily increased over the last century (Figure 3).

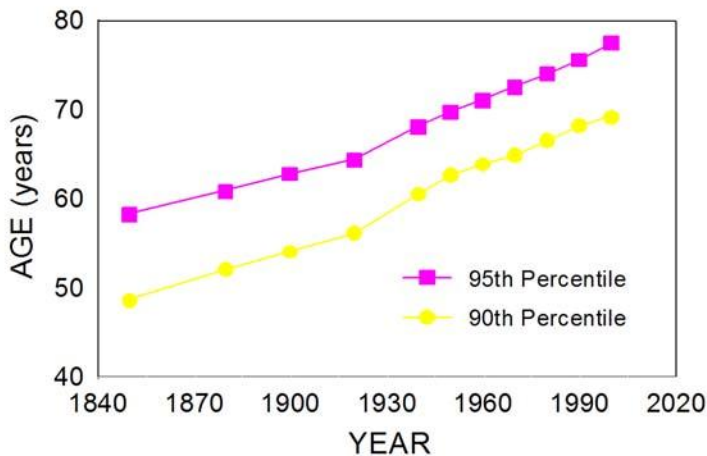


Figure 3. Age of oldest 90% or 95% in United States

These changes have led to an alteration in the age distribution within the population, as shown in Figure 4.

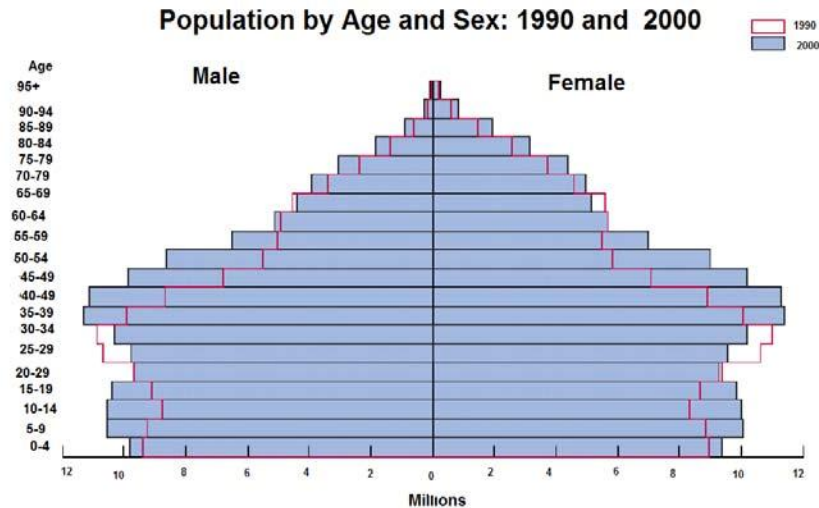


Figure 4. Changes in age distribution in the US population

These changes are not limited to the United States but are probably reflective of the developed world.

Our responsibility as anesthesiologists living and working in Florida is to understand these changes, since data show that Florida is the US state with the greatest proportion of the elderly:

- Florida (18%)
- Pennsylvania (16%)
- West Virginia (15%)
- Iowa (15%)
- North Dakota (15%)
- Rhode Island (15%)

US Department of Commerce: Economics and Statistics Administration, Age: 2000 – 2000 Brief

In fact, Florida has the most rapidly growing population of elderly residents:

- 1980: 1,687,573 aged 65 years or older (17.3%)
- 1990: 2,355,926 aged 65 years or older (18.2%)
- Estimated for 2010: 3,401,881 aged 65 years or older (19 %)

Source: Florida Demographic Survey 2000

Our professional lives are affected by these data:

- **35% of surgeries in the United States are in patients over age 65**
- **More than 16,000,000 surgical procedures per year are in people over 65**

These demographic changes, while seemingly beneficial, have further increased the social impact of ever-upward-spiraling health costs. Although presently the elderly make up only one third of the surgical population, they consume one half of federal health care expenditures. This cost in all probability will continue to increase. Postoperative hospitalization and intensive care are often long. It has been estimated that there is a 3-fold increase in mortality related to surgical procedures in the elderly. However, there does not seem to be a relationship between advanced age and anesthetic morbidity. They can be complicated by a number of factors, such as delayed wound healing and the complications of already-present chronic disease. In addition is the possibility of prolonged cognitive dysfunction in this age group.

Question:

Will this increase in the number of elderly patients “bust” the federal budget?

The answer is possibly **BUT** not necessarily.

One scenario has the federal budget staggering in the first half of the 21st century under the weight of elderly Baby Boomers as they receive medical benefits promised them. This model forecasts that up to one third of the federal budget will be spent on health care by the year 2030.³

There is an alternative, more optimistic view. This view holds that disability and morbidity will continue to become more compressed, leading to healthier years in later life.⁴ The average retirement age will rise. Productivity increases and improved tax revenues will offset the demands that the elderly will make on the federal budget. In fact, one suggestion is that the percentage of those over 65 years old requiring Medicaid coverage for long-term health care will decline in the next century.⁵

“The straw which breaks the camel’s back may be a very small one when the camel is nearing the end of its journey.” — Harold Griffiths, M.D.

It is important therefore that we understand that:

- The surgical population is changing
- This has implications for the health care delivery system
- Older patients are physiologically different from younger adults, as well as different in the way they respond to our anesthetic agents
- The elderly often have chronic conditions that are not prevalent in the younger population

- There are special methodologies for assessing the risk in such patients
- Often the postoperative period has a different form and time course in elderly patients

Self-Assessment

Circle the answer you think most clearly matches the questions below:

- 1) There is a clear-cut definition of aging. True False
- 2) The elderly will make up an increasing proportion of the US population over the next 50 years. True False
- 3) This increase will be equal across all age groups. True False
- 4) These changes will be limited to the United States. True False
- 5) Any increase in the number of elderly patients will have no/little impact on the surgical workload. True False
- 6) It is clear that any increase in the number of elderly patients will have a negative impact on the US economy. True False

References

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