Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

99-255

In the matter of

Amendments of Parts 2 and 95 of ET Docket 92-255 of the Commission's rules to create a Wireless Medical Telemetry Service (WMTS).

Reply comments of the

AMERICAN COLLEGE OF CLINICAL ENGINEERING (A.C.C.E)

1. Based on documented present and demonstrable future interference from various high powered sources of electromagnetic radiation to wireless medical telemetry devices and the attendant increased risks to patients monitored by such devices the A.C.C.E concurs and supports the Commission's intent to establish WMTS as a new service under part 95 of the Commission's rules with co-primary status at 608-614 MHz (Channel 37) and primary status on the frequency bands of 1395-1400 and 1429-1432 MHz.

2. There has been an increase in interference to present WMTS channels in the 460-470 MHz bands. These incidents of interference have rendered the affected WMTS channels inoperable for the duration of the interference. This has caused increased, unpredictable risk to patients utilizing WMTS technology. The statements to the Commission in which LMCC disputes interference to medical devices specifically attributable to low power (2 watt) mobile sources directly conflicts with the experience at Texas Children's Hospital in Houston, Texas. In several instances of interference to WMTS at Texas Children's Hospital, the origins of the interfering emissions have been documented as being caused by Low Power (2-5 watts) Land Mobile licensees operating on offset frequencies in the 450-470MHz band. The A.C.C.E. therefore recommends that the Commission implement its recommendations with all due haste.

3. The A.C.C.E disputes the PCIA contention that coordination will allow concurrent use of high powered Land Mobile equipment in the 460-470 MHz spectrum currently utilized by WMTS. While field strength from stationary (fixed service) stations and their effects on biomedical devices including WMTS can be predicted to some degree, the field strength of mobile units and their consequential effects on WMTS receiving systems cannot be reasonably predicted. Allowance of occupancy this spectrum prior to WMTS migration by Land Mobile entities will severely increase risk to patients monitored by WMTS devices.

4. The A.C.C.E supports the findings and recommendations of the American Hospital Association (AHA) with the following exceptions:

   The A.C.C.E. recognizes the advantages, technologically of the developmental flexibility and capacity capability available through the use of advanced reception and antenna systems in such low power applications as WMTS. While realizing that there are additional costs inherent in receiving equipment utilizing advance technologies, we believe that the benefits gained will far outweigh the cost. We feel that such systems will allow WMTS to realize the goals of advanced wireless monitoring technology consistent with the joint goals of spectrum reutilization and spectrum efficiency. We therefore support the Commission's limitations on radiated power by WMTS transmitters.

   The A.C.C.E. is of the opinion that the 608-614 MHz band be considered a transition band for the WMTS until such time as proven, deployable technology is available to enable a secure

and orderly transition to the 1.4 GHz frequency bands proposed by the Commission. It is anticipated that increasing intermodulation products caused by high power Land Mobile activity on frequencies adjacent to the 608-614 MHz band will fall within the 608-614 MHz band. Reliable operation of WMTS devices will be further compromised by incidents of receiver desensitization and possible data corruption as additional television stations are activated on adjacent channels 36 and 38.

5 The A.C.C.E. dissents with the Commission's proposal of time limitations on the manufacture of replacement equipment for use at present WMTS frequencies. There are many rural areas of the United States that will not be affected by the changes in Land Mobile or television spectrum occupancy for many years to come. Little risk is posed to medical institutions operating in those rural areas. Due to the burden of cost that would be borne by those rural institutions if the Commission's proposals were to be followed, it is the opinion of the A.C.C.E. that available patient care options in those institutions would be limited out of financial necesssity. WMTS systems presently in use in those institutions should be accorded support by the manufacturers of WMTS equipment until such time as the present WMTS frequencies become unusable in those areas. The A.C.C.E. does agree with the Commission regarding the sales of new WMTS systems in that these systems should operate only within the spectrum proposed by the Commission.

6 The A.C.C.E must strongly disagree with the Final Analysis Communications Services characterization of the Commission's proposed 14 MHz of spectrum allocation as "wasteful and unwarranted". The AHA's survey of hospitals documents the current need for telemetry in a reasonable methodical manner. Attached are additional supporting examples of need provided by the membership of A.C.C.E. The A.C.C.E. also supports the AHA's growth projections based on the trends impacting healthcare contained in the AHA's report. The A.C.C.E. believes that a growing elderly population (based on the attached information from the National Institutes of Health) will also impact that growth. This information documents an 11-fold increase in the elderly population age 65 and older between 1990 and 1994 and projects an "explosive growth in the numbers of very old people" in the future. A separate, attached document from the National Institutes of Health recognizes that heart disease is the leading cause of death for older Americans and hence telemetry will play a key role in the medical care of this growing elderly population.

7. Although present WMTS technology applications are not specifically oriented towards sites removed from the hospital campus, the rate of increase in both patient needs related to home care and the expanding applications of the WMTS technology precludes the placement of restrictions on the future uses of WMTS in the home. The A.C.C.E. requests that the Commission allow for the expansion of WMTS to the home.

8. Based on the limited scope and requirements of WMTS frequency coordination, its' familiarity with the hospital industry and issues of focus, the A.C.C.E. supports the appointment of the AHA as frequency coordinator for the WMTS.

Jennifer C. Ott
President
American College of Clinical Engineering

Methodist The Methodist Hospital

6565 Fannin Street
Houston, Texas 77030-2707
(713) 790-3311

Federal Communications Commission
The Portals
445 12th St., SW, Room TW-A325
Washington D.C. 20054

Re: Telemetry Channels

Dear Sir:

I am writing to provide you information on our use of medical telemetry at The Methodist Hospital in Houston, Texas. We are currently operating a total of 174 channels of telemetry. Of these, 144 are VitalCom, of which 24 are multiparameter using the Propaq Encore with V-Link. The other 30 channels are old Marquette analog telemetry. By midyear next year, we will replace the 30 Marquette channels and add another 106 channels to bring us to a total of 280 channels. Of the new channels, a higher percentage is expected to be multiparameter, but I am not sure of the mix right now. I remember that in 1988 we increased from 52 to 100 channels. So between 1988 and 1998 we gradually increased from 100 to 174 channels but I do not remember the dates.

Sincerely,

Forrest Fox
Director
Anesthesia Services
Biomedical Engineering

FF:cfm

Intracoastal Health Systems, Inc.
St. Mary's Medical Center
Good Samaritan Medical Center
Clinical Engineering
901 45th Street
West Palm Beach, FL 33407

Federal Communications Commission
The Portals
445 12th St., SW, Room TW-A325
Washington, D.C. 20054

Ref: Medical Telemetry NPRM

Dear Sirs:

At Intracoastal Health Systems we currently utilize a total of 76 channels of medical telemetry in the following areas/applications:

- **30 channels in our Progressive Care Unit at Good Samaritan Hospital**
- **36 channels in our Cardiac Telemetry unit at St. Mary's Hospital**
- **8 channels in our cardiac rehab unit at Good Samaritan Hospital**
- **2 channels in our Labor and Delivery unit at St. Mary's Hospital.**

Our number of channels has increased by 6 in the last two years and is expected to increase by at least 16 in the next two years.

Sincerely,

Henry Montenegro M.S., CCE
Director, Clinical Engineering

October 15, 1999

TO: Federal Communications Commission
The Portals
445 12th St., SW, Room TW-A325
Washington DC, 20054

FROM: Ted Cohen, CCE, MSBME
Manager, Clinical Engineering
UC Davis Medical Center
2315 Stockton Blvd
Sacramento, CA 95817

SUBJECT: Allocation of Frequencies for Medical Telemetry

The University of California Davis Medical Center (UCDMC) in Sacramento California has been using medical telemetry for more than 20 years in order to monitor ECG in ambulatory patients. Like many hospitals, UCDMC has intermittently experienced various interference and "dropout" problems with its telemetry systems. At the current time UCDMC has approximately 50 channels of telemetry operating in both the UHF (~470MHZ) bands and VHF (~180MHZ) bands.

In addition, at the present time we are installing an additional 16 channels of VHF. The decision to use VHF vs UHF was difficult and there are currently potential problems with both. The VHF band has the potential for interference from broadcast television and particularly, new digital television band allocations. The UHF band has the potential for interference from fast food restaurants, trucking companies (and we are very close to several major freeways), and other mobile sources. I understand that the mobile source interference issues are getting worse. After reviewing the digital TV allocations for Sacramento, we chose the VHF system since at least the TV allocations are fixed and known (as opposed to the mobile UHF systems). However, another problem with the VHF systems is the relatively large size of the antennas and the low power allowed. For example, with the system we are purchasing in order to cover one hospital floor (approximately 35 patient beds) we have to install 18 antennas of 3 foot radius each. This is a considerable construction/installation project and cost and is definitely a negative for VHF.

Our plans are to continue to add to our medical telemetry systems in both numbers of channels and by adding additional physiological parameters (e.g. pulse oximetry) to existing systems. However, for the reasons listed above, we believe that a new dedicated band for medical telemetry would provide much less interference and perhaps better coverage, depending on power allowed. Any allocations of a new band will take a considerable amount of time for our hospital and others to transition to. However, I believe that the problems are significant enough, and growing, that if equipment for such a new dedicated band was available we would take the opportunity to start using it and eventually migrate all of our telemetry systems to the new band(s). This transition would probably take our hospital 10 to 15 years.

If you need any more information from me, please call me at 916-734-2846.

Contact: Public Information Office (301) 496-1752
Vicky Cahan or
Claudia Feldman
Embargoed by U.S. Census Bureau
June 16, 1999 (revised release)

New Census Report Shows Exponential Growth in Number of Centenarians

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The number of centenarians in the U.S. is growing rapidly, according to a new report from the U.S. Census Bureau. During the 1990s, the ranks of centenarians nearly doubled, from about 37,000 counted at the start of the decade, to more than an estimated 70,000 today. And analysts at the Census suggest that this per-decade doubling trend may continue, with the centenarian population possibly reaching 834,000 by the middle of the next century.

The report, funded by the National Institute on Aging (NIA) at the National Institutes of Health, does point out significant problems with information on the true ages of people 95 and older, though the data are becoming more accurate with improvements in birth records. But as scientists work to improve data quality, the trends in the growth and characteristics of the very elderly are now becoming evident, say NIA experts, as researchers intensify their study of this population.

"We are increasingly interested in the lives of these remarkable people," notes Richard M. Suzman, Ph.D., Associate Director of the NIA for Behavioral and Social Research. "The growing numbers of extremely old people give us the opportunity to examine their lives in more detail. By doing so, we will be able to discover the genetic, medical, social, and behavioral factors contributing to longevity and robustness in very advanced age."

Suzman points out that scientists will be watching mortality rates of people over 50 very carefully to see if projections about the growth in the elderly population, including centenarians, can be refined. The Census estimates range from projecting a low of 265,000 centenarians in the year 2050 to a high-end calculation of about 4.2 million. Its "middle series" projection is 834,000.

According to the report, the centenarians share many of the characteristics that Census and other researchers have noted for people age 85 and above. Most significantly:

- Four out of every five centenarians are women. Despite the dramatic slowing of death rates at the oldest ages over the past few decades, gains for men have been smaller and men still lag behind women in attaining age 100. Projections suggest that these differences will continue into the middle of the 21st century.

- The centenarian population, mostly non-Hispanic white today, will become significantly more diverse in the coming years. Approximately 78 percent of today's centenarians are white, a proportion expected to decrease to about 55 percent by 2050. The percentage of the older Black population is expected to remain the same at about 13 percent, with the proportion of Hispanics rising from 5.6 percent to about 20 percent and Asian and Pacific Islanders expected to grow from about 3 percent to nearly 11 percent.

- Only about half of the centenarians counted in 1990 had completed some high school or more. This compares with four out of five people aged 65 through 69 in 1990 with at least some high school. The impact of educational attainment, a major determinant of health status, will be closely observed as the younger group, or cohort, moves toward very advanced age.

- The nation's centenarians are concentrated on both U.S. coasts, with about 10 percent of the total number living in California and 8 percent making their homes in New York. A state-by-state

analysis shows that, proportionally, Iowa has the highest percentage of centenarians among its own population, followed by South Dakota. (This description reflects a June 16, 1999, Census revision to the state-by-state section of the report.)

- Internationally, the U.S. may have the highest proportion of centenarians among people age 85 and older, although this comparison can only be made among countries with relatively good quality data. There are approximately 120 centenarians per 10,000 people age 85 and older in the U.S.. This finding is in line with research indicating that life expectancy after 80 is higher in the U.S. than in a number of other developed countries.

Data from the report, *Centenarians in the United States*, P23-199, will be available at http://www.census.gov/prod/99pubs/p60199/pdf, the Census website. It will be posted June 16.

The report is the latest in a series of joint demographic projects by the Census Bureau and the NIA to characterize the elderly population and examine its dynamic growth in the past and as projected into the next century. It was prepared by Victoria A. Velkoff, who heads the Aging Studies Branch at the Census Bureau.

Specifically on the very elderly, the NIA has supported other research projects, including a Massachusetts study of centenarians by Thomas Perls, M.D., M.P.H., of Harvard University and a study of centenarians in Europe and China by James Vaupel, Ph.D., of Duke University and the Max Planck Institute in Germany.

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Contact: Public Information Office (301) 496-1752
August 2, 1996

Exercise Can Boost Cardiac Fitness in Conditioned and Out-of-Shape Older People

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It may not be too late to benefit from exercise, even for people in their 60's and older, according to scientists at the National Institute on Aging (NIA) Gerontology Research Center, the Johns Hopkins Medical Institutions, and the Veterans Administration Medical Center, Baltimore. They find that an aerobic exercise program for sedentary older people improves cardiovascular function regardless of prior physical conditioning. The results of this study appear in the August 1 issue of Circulation.

"Older people have less reserve mechanisms to augment their heart function during physical activities than younger people do," said Edward Lakatta, M.D., Chief of the Laboratory of Cardiovascular Science at the NIA and the study's principal investigator. "But aerobic exercise conditioning can offset normal aging of the heart by making it a better pump, even for those who begin later in life, at age 60 or 70. In other words," points out Lakatta, "you don't lose the ability to get into condition. You can improve your heart's pump function, which declines with aging. But, the decline in maximum heart rate with aging is unaffected by conditioning," said Lakatta.

Lakatta and colleagues studied ten sedentary men and eight endurance-trained athletes, ages 58 to 62 years. All were healthy and free of heart disease. The sedentary, older men exercised for 24 to 32 weeks, and the athletes stopped their exercise for 12 weeks. Researchers measured the subjects' aerobic capacity and cardiovascular performance at the beginning and end of the study using a treadmill exercise test and a graded bicycle exercise test of the heart's ability to pump blood.

As a test of aerobic capacity, each man walked or ran to exhaustion on the exercise treadmill with a nose clamp and a tube in his mouth to measure oxygen intake and carbon dioxide output. This determined VO2 max, the maximum rate at which the body consumes oxygen during exhaustive exercise. VO2 max is determined by the heart's ability to pump blood through the lungs to pick up oxygen, deliver oxygen to working muscles, and have muscles extract oxygen from the blood. VO2 max reveals a person's level of aerobic capacity or fitness--the higher the better.

The men also had a state-of-the-art heart efficiency test. Each was injected with technetium, a radioisotope that adheres to red blood cells. A camera lens aimed at the person's chest while he pedaled on an exercise cycle photographed the radioisotope-labeled blood in the heart's left ventricle numerous times. A computer translated these measurements into an image of the pumping heart. Among other measures, the test determined the heart's ability to empty, which is an indicator of how strongly and efficiently the heart acts as a pump--another measure of cardiovascular fitness.

As the sedentary men trained and the endurance-trained athletes detrained, their cardiovascular performance, specifically their heart's ability to pump and their VO2 max, changed. With training, the sedentary men improved function and the athletes who stopped training lost function.

Prior to the study, the VO2 max averaged more than 55 percent higher in the endurance-trained athletes than in the sedentary men. The rise in the sedentary participant's VO2 max compared to the exercise trained participants' drop was about the same, with the rise being 11.3 percent (from 32.1 to 36.2 ml/kg/min) and the drop being 15.8 (from 49.9 to 42.0 ml/kg/min) with a margin of error of about 4.5 percent for each group. At peak effort on the exercise cycle, cardiac index, the amount of blood pumped each minute, improved from 8.5 to 9.3 l/min/m2 in the sedentary men as they exercised, and dropped from 10.5 to 9.4 1/min/m2 as the endurance-trained athletes stopped exercising.

Ejection fraction, the percentage of blood leaving the heart during each heart beat, changed in the sedentary men as they trained from 73 to 81 percent, and decreased, from 85.6 to 81 percent, in the

endurance-trained athletes when they stopped exercising. The higher the ejection fraction, the better the heart's ability to pump oxygen-rich blood throughout the body. Ejection fraction improved as a result of the greater ability of the heart to squeeze down at the end of each heart beat. The latter increase was nearly twofold when compared over the extremes of the conditioning states.

"With age, the hearts of otherwise healthy sedentary people gradually lessen their ability to increase their heart rate and ejection fraction during acute exercise. Previous studies have shown that older people can benefit from aerobic exercise, but a novel aspect of this study found that the relative benefits were the same regardless of how fit they were when they started exercising," said Lakatta.

Age is a major risk factor for cardiovascular disease. The numbers of cases of heart disease and stroke rise steeply after age 65, accounting for more than 40 percent of all deaths among people age 65 to 74, and almost 60 percent at age 85 and above. For example, at maximum capacity, older athletes' heart function seems to be closer to that of younger men than to that of older men who do not exercise regularly.

Dr. Lakatta's colleagues include Jerome L. Fleg, MD and Frances C. O'Connor, MPH at the NIA, Gerontology Research Center; Jan Busby-Whitehead, MD, Andrew G.P. Goldberg, MD, and Loretta E. Lakatta, BSN at University of Maryland School of Medicine and Geriatrics Research, Education and Clinical Center, Veteran Administration Medical Center; James M. Hagberg, PhD at the Veterans Administration Medical Center, Divisions of Cardiology and Geriatrics; and Steven P. Schulman, MD, and Lewis C. Becker, MD at the Johns Hopkins Medical Institutions, Division of Cardiology.

The National Institute on Aging, part of the National Institutes of Health, leads the Federal effort supporting basic, clinical, epidemiological and behavioral research on aging and the special needs of older people.

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Contact: Public Information Office (301) 496-1752
May 20, 1996

Aging America Poses Unprecedented Challenge, Says New Census, Aging Institute Report

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Older Americans are better off -- healthier and wealthier -- than ever before. But maintaining and building upon those gains may prove difficult as the population ages dramatically and as baby boomers start to make their mark as the older generation, according to a new Bureau of the Census report, 65+ in the United States.

The detailed book, supported by the National Institute on Aging (NIA), chronicles the demographic and social characteristics of a rapidly aging America.

It is expected that the baby boom generation, born between 1946 and 1964, will be in good physical and fiscal shape when the first "boomer" turns 65 in 2011. The boomers' health is generally better than that of their parents, most women will have worked to generate their own Social Security and pension income, and education levels among baby boomers is higher. All these factors bode well for the boomers' healthy and financially secure retirement.

Ultimately, however, the boomers will find themselves part of another major demographic movement -- the explosive growth in the numbers of very old people living to age 85 and beyond. From 1960 to 1994, these "oldest-old," who in large proportion are quite frail and poor, have increased by 274 percent. Their numbers are expected to reach nearly 7 million by 2020 and soar to at least 19 million and possibly to 27 million or higher by 2050.

"This report, coming on the eve of the retirement of the baby boom generation, is a reminder of the magnitude of the aging of America and the things we may need to think about as societal aging accelerates," says Richard M. Suzman, Ph.D., head of NIA's Office of the Demography of Aging, which initiated the report.

At the same time, Suzman emphasizes that unpredictable changes, including possible medical and technological advances make long-term forecasting difficult. "Demographic research is giving us important clues to how we might prepare for an aging world, but no one can predict for certain how the aging of the population will affect us," says Suzman.

The 200-page report focuses on today's elderly and represents the most complete compendium of population, health, economic, and social data from a variety of sources. The data also include a state-by-state breakdown of the older population and a look at migration patterns and other trends among the states. Geographic data are available by county as well.

The report covers the growth of the population, longevity and health, economics, geographic distribution, and social characteristics. Questions about future implications of population aging are also posed.

Statistical Highlights

The phenomenon of population aging is occurring in the U.S. and worldwide:

- The U.S. continues to age dramatically. The elderly population age 65 and older increased 11-fold from 1900 to 1994, to 33.2 million people. During the same period, the under-65 population grew only 3-fold.

- The oldest old segment of the population is growing most rapidly. In 1994, an estimated 3.5

million people were age 85 and older, representing 10 percent of the elderly in the U.S. By the middle of the 21st century, it is projected that there will be as many people age 85 and older as there are people age 65 to 69.

- In coming decades, the 65+ population will be much more racially and ethnically diverse than it is today. Of the 80.1 million elderly projected for 2050, it is estimated that about 8.4 million will be Black, 6.7 million will be races other than White or Black, and 12.5 million will be Hispanic, of any race.

- The number and proportion of the elderly is increasing worldwide. In 1994, the world population age 65 and older was 357 million. China and India have by far the largest numbers of older people, China with nearly 72 million and India with over 36 million. The U.S. ranks third.

- Twenty percent of the world's elderly population, or 61 million people, are age 80 and older. By 2020, the numbers of the oldest old are expected to more than double to about 146 million.

New evidence shows that rates of disability and disease may be slowing among older people, suggesting that progress can be made to improve the health of people age 65+. However, with population aging, living to very advanced age likely will mean disease and disability for increasing numbers of older Americans:

- In 1991, the average life expectancy at birth for Americans was 75.5 years, almost double what it was in 1900. There are notable gaps in life expectancy, though. Women live an average of 79 years while men can expect to live to age 72.

- Looking at mortality for 1979 through 1981, the most recent data available at the time of the report's publication, 80 percent of Whites and Hispanics survive to age 65, compared with 66 percent of Blacks and 71 percent of American Indians.

- When asked about their health, older Americans are surprisingly positive. In 1992, about 71 percent rated their health as good, very good, or excellent. How people perceive their health is considered an important indicator of longevity.

- Increasing age heightens the probability of functional limitations. In one survey, 9 percent of people age 65 through 69 required day-to-day assistance, including help with bathing, dressing, and eating, compared with 50 percent for those age 85 and older. One-third of elderly women age 75 and older are functionally dependent and in need of considerable assistance. The link between advancing age and increasing functional problems has enormous implications for long-term care, the report says. The number of elderly requiring services for functional disabilities can be expected to increase unless there are medical revolutions on several fronts, according to the report.

- Heart disease is the leading cause of death for older Americans, but a number of other causes are important. Heart disease is responsible for about one-third of all deaths at age 65 to 74 and 44 percent among people 85 and older. The proportion of deaths due to coronary heart disease has dropped, however, and now death rates from cancer take a third of lives between age 65 to 74, especially among Blacks. White men have the highest suicide rate among the elderly; in fact, elderly white men are more likely to commit suicide than to die in a motor vehicle accident.

The elderly are faring better economically than they have in decades past. But generalizations about income, poverty status, and wealth are dangerous. A breakdown by gender, age, marital status, and race or ethnic origin shows that large numbers of older people are -- and will continue to be -- in a precarious financial state:

- Patterns of participation in the labor force are changing, with enormous implications for the quantity and quality of time after work. Older men are less likely than in the past to participate in the workforce, although this decline appears to have stabilized. The change is significant even among men age 55 to 59; in 1967, 90 percent of men that age were in the labor force compared

with 78 percent in 1993.

- Another notable shift involves the increased role of women in the workforce. For example, in 1950, only 31 percent of women age 50 to 54 worked, compared with 70 percent in 1993. Women also make up a larger share of the older workforce, from 23 percent in 1950 (women age 55 and older) to 44 percent in 1993.

- The median income for the elderly (in constant 1992 dollars) has more than doubled since 1957. But there are major income differences among subgroups: In 1992, the median income for elderly men was $14,548 compared with $8,189 for women. Some 66 percent of White married-couple households had incomes of at least $20,000, compared with 43 percent for elderly Blacks. Social Security is the major source of income for 63 percent of beneficiaries in 1992 and accounts for almost all income for 26 percent. Private pensions are important sources of income for older people. People receiving private pension income averaged $8,278 from pensions in 1992.

- The poverty rate among older people living in the community increases substantially with age. Nearly 11 percent of people age 65 to 74 were poor in 1992, compared with about 20 percent for age 85 and above.

- Poverty is especially a problem for older women, particularly for those living alone. In 1992, elderly women had a higher poverty rate (15.7 percent) compared with men (8.9 percent). Women make up 58.4 percent of the elderly population, but 71.3 percent of the poor elderly.

- Wealth, too, is very unevenly distributed among older Americans. The home is the major asset: 82 percent of the elderly own their homes free and clear. Home ownership is most likely to be the province of married couples. About 90 percent of married couples age 65 to 69 own their homes, compared with 67 percent of aged women who live alone.

The aging of America has dramatic effects on social structure in the U.S., influencing marital status, caregiving, and living arrangements. These changes are likely to have an enormous impact on the current, informal system of long-term care, affecting who needs care, who can provide it, and who can afford it. According to the report, however the changes play out, with more frail elderly, more people are likely to experience the economic, emotional, and physical stresses of long-term care:

- Most elderly men are married while most elderly women are not, according to 1993 data. The gender gap in life expectancy and differences in remarriage rates among middle-aged and older adults account for much of the differences.

- In 1990, the latest year for which data were available, elderly women were more than 3 times as likely as men to be widowed (14 percent of men compared with 48 percent of women). In addition, divorced men age 45 to 64 remarry at a rate of 67 per 1,000 compared with 30 per 1,000 for women of the same age.

- Elderly women are much more likely to live alone than elderly men. About 9.4 million older people lived by themselves in 1994, of whom 79 percent were women. Of people living alone who have children, 86 percent had at least weekly contact with their children. Research indicates that older people living alone have greater levels of depression, loneliness, and social isolation. Newer findings, however, show that many older people are developing social networks of friends and are participating in activities that appear to lessen the impact of losing a spouse.

- In 1990, about 1.6 million people age 65 and older lived in nursing homes. About 35 percent of people reaching age 65 will have at least one nursing home admission during their lifetime. With new research showing a decline in the rate of disability and disease among older people, however, the elderly nursing home population may grow at a slower rate than the overall older population.

- The level of education among the elderly population will be increasing significantly over the next few decades. In 1993, some 60 percent of those 65+ had a high school diploma or higher,

compared with more than 87 percent of those ages 40 to 49. Higher levels of education are linked to better health among adults of all ages and additional education could be an important factor in ameliorating the health problems associated with advancing age.

The report is the latest in a number of joint projects of Census, part of the Department of Commerce, and the NIA. Both are members of the Federal Forum on Aging-Related Statistics, a government-wide group that works to assure the quality and adequacy of Federal data on the elderly.

The NIA, part of the National Institutes of Health in the Department of Health and Human Services, leads the Federal effort supporting and conducting biomedical, clinical, behavioral, and social research on aging through its Office of the Demography of Aging and other programs. The Institute recently established nine centers for research on demography to improve and promote demographic research on health, economics, and aging.

The media may obtain copies of 65+ in the United States from the Census Bureau Public Information Office, 301-457-3030. Copies are available to the general public by calling 301-457-4100. A video news release will be fed, Monday, May 20, from 2-2:30 p.m. on Galaxy 6, Transponder 2, and Thursday, May 23, from 12-12:30 p.m. on Galaxy 4, Transponder 7.

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