



GROWING OLDER IN AMERICA

THE HEALTH & RETIREMENT STUDY

NATIONAL INSTITUTE ON AGING ■ ◆ ★ ✦ NATIONAL INSTITUTES OF HEALTH
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Design: Levine & Associates, Inc.

Project Management: Susan R. Farrer, JBS International, Inc.

Please send comments, suggestions, or ideas to:

Freddi Karp, Editor

Office of Communications and Public Liaison

National Institute on Aging

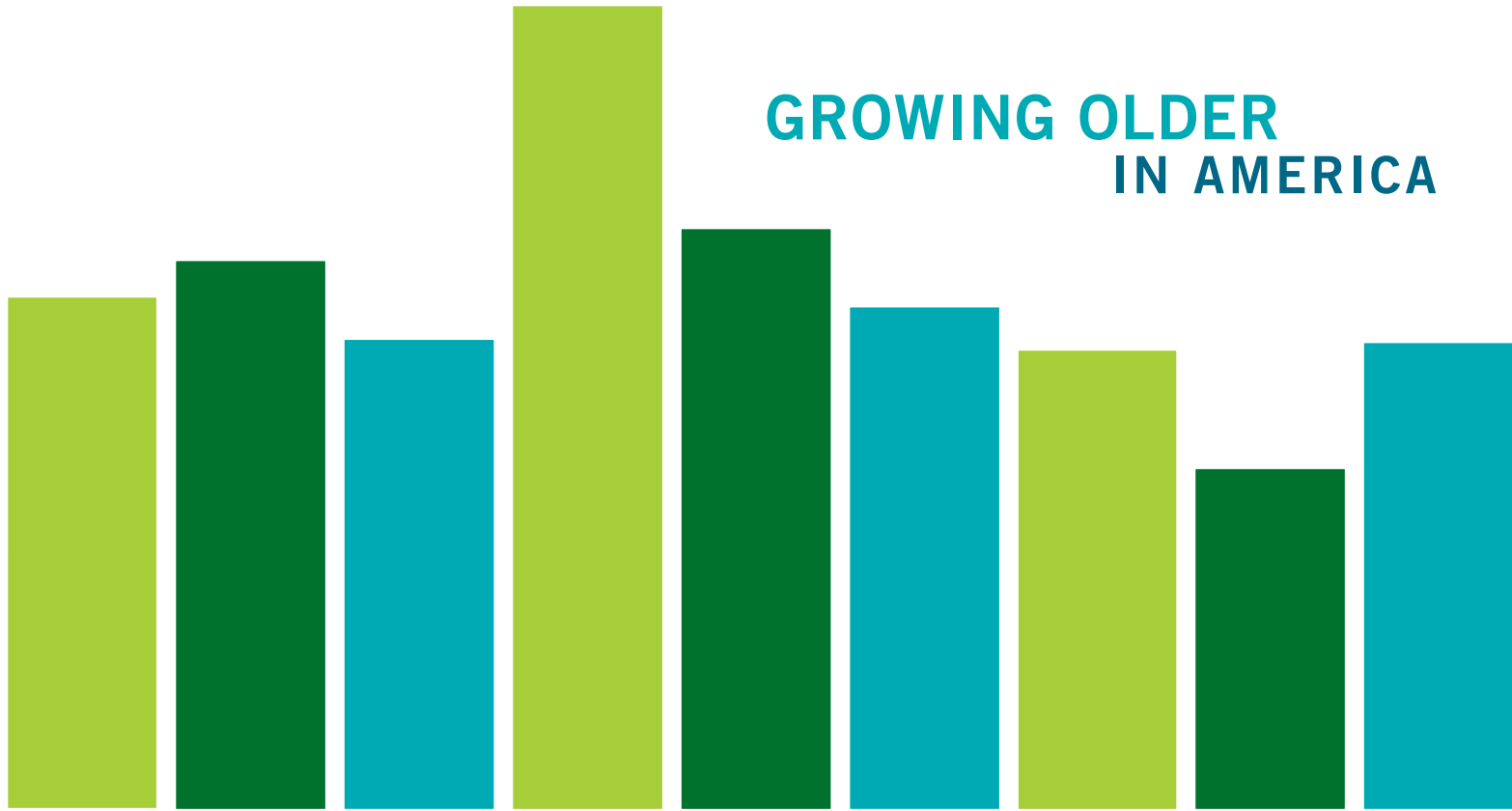
Building 31, Room 5C27

Bethesda, MD 20892

301-496-1752

karpf@nia.nih.gov

GROWING OLDER IN AMERICA



THE HEALTH & RETIREMENT STUDY

NATIONAL INSTITUTE ON AGING ■ ◆ ✦ ✧ NATIONAL INSTITUTES OF HEALTH
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

TABLE OF CONTENTS

PREFACE	4
LIST OF FIGURES AND TABLES	7
INTRODUCTION	9
Objectives and Design of the HRS	10
How Can the HRS Data Be Used?	12
Unique Features of the HRS	13
Study Innovations	14
Protecting HRS Participant Confidentiality	15
Linkages to Other Datasets	16
Background and Development of the HRS	16
The HRS: A Model for Other Countries	18

CHAPTER 1: HEALTH

Chapter Highlights	20
Health Status and Specific Conditions	21
Health Behaviors and Outcomes	23
A Community-Dwelling Sample	24
Cognitive Function	25
Depressive Symptoms and Depression	26
The Aging, Demographics, and Memory Study	26
Health Care Coverage	28
Health Care Use	29
Use of Alternative Medicines and Supplements	31
Aging and Medical Expenditures	31
Effects of Unexpected Health Events	32
Disability and Physical Functioning	33
Health and Work	35
How Long Do People Think They'll Live?	36
Health Status of U.S. versus English Older Adults	38

CHAPTER 2: WORK & RETIREMENT

Chapter Highlights	40
Labor Force Participation	41
The Changing Nature of Work	43
Occupations After Age 70	45
Hours and Pay	45
Job Flexibility	46
Reasons People Retire	47
Health versus Financial Factors	48
The Role of Medicare and Private Health Insurance	48
Diseases and Retirement	48
Trends in Retirement Timing	49
Early Retirement Incentives	50
Gradual Retirement	51
Pension Plan Trends and Retirement	51
Knowledge About Pension Plans	52
The Impact of Stock Market Changes on Retirement	52
Retirement and Consumption	53
Enjoyment of Retirement	53
Helping Others	54



CHAPTER 3: INCOME & WEALTH

Chapter Highlights	56
Amount and Sources of Income	57
Pre-Retirement Saving Behavior	57
Health and Income	61
Unexpected Health Events and Income	61
Social Security Benefit Acceptance	62
Conversion of Investments to Annuities	62
Wealth and Its Distribution	63
Refining the Measurement of Wealth	66
Marriage and Wealth	67
Pension Wealth	68
Aging and Housing Equity	68
Wealth and Health	69
Unexpected Health Events and Wealth	70
Probabilistic Thinking and Financial Behavior	72

CHAPTER 4: FAMILY CHARACTERISTICS & INTERGENERATIONAL TRANSFERS

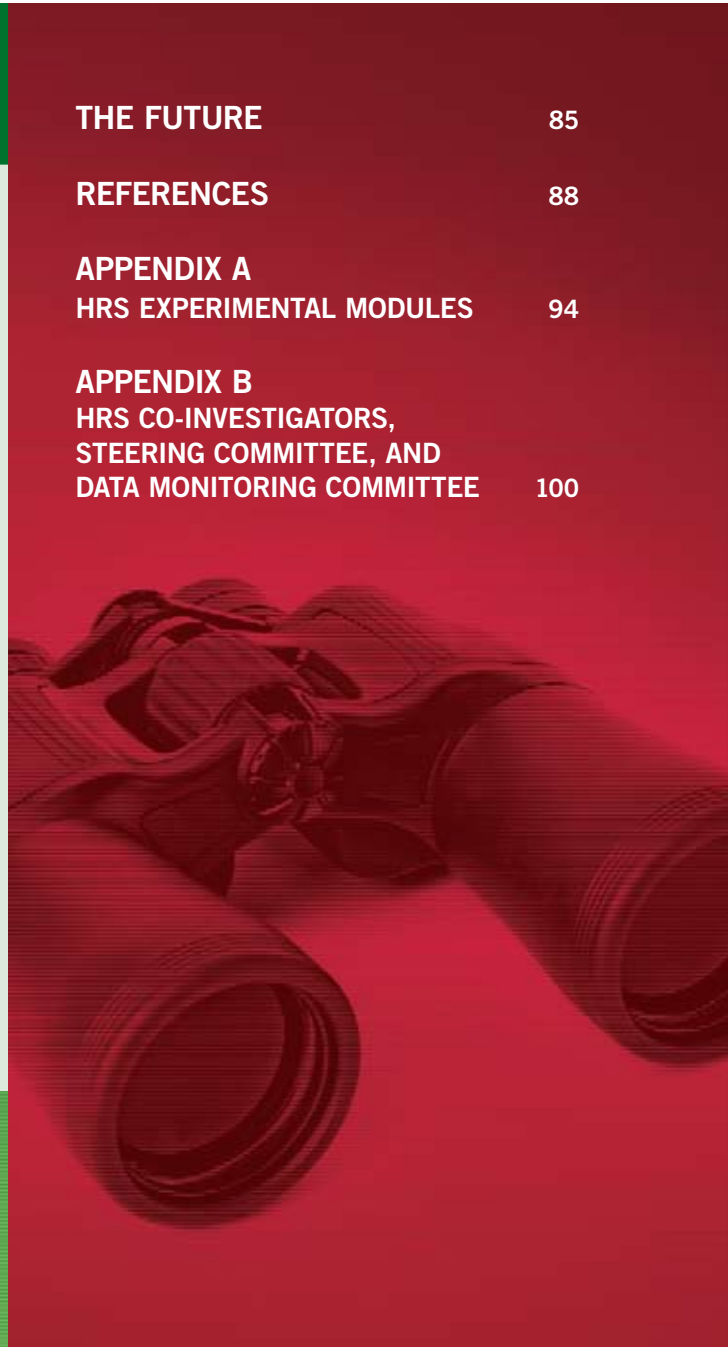
Chapter Highlights	74
Living Situations	75
Living Arrangements and Health	75
Family Status and Psychological Well-Being	76
Marital Status and Physical Well-Being	76
Marital Status and Wealth	77
Multiple Family Roles and Well-Being	77
Amount of Bequests	78
Patterns of Intergenerational Transfers	79
Reciprocity and Intergenerational Transfers	82
Participants' Transfers to Parents	82
Trade-Offs Between Employment and Care	82
Caregiving Costs, Insurance	83
Grandparents' Care of Grandchildren	84

THE FUTURE 85

REFERENCES 88

APPENDIX A
HRS EXPERIMENTAL MODULES 94

APPENDIX B
HRS CO-INVESTIGATORS,
STEERING COMMITTEE, AND
DATA MONITORING COMMITTEE 100



PREFACE

There is no question that the aging of America will have a profound impact on individuals, families, and U.S. society. At no time has the need to examine and understand the antecedents and course of retirement been greater than now, as the baby boom begins to turn age 65 in 2011.

This publication is about one major resource—the Health and Retirement Study (HRS)—designed to inform the national retirement discussion as the population so dramatically ages. Since its launch in 1992, the HRS has painted a detailed portrait of America’s older adults, helping us learn about this growing population’s physical and mental health, insurance coverage, financial situations, family support systems, work status, and retirement planning. Through its unique and in-depth interviews with a nationally representative sample of adults over the age of 50, the HRS provides an invaluable, growing body of multidisciplinary data to help address the challenges and opportunities of aging.

The inspiration for the HRS emerged in the mid-1980s, when scientists at the National Institute on Aging (NIA) and elsewhere recognized the need for a new national survey of America’s expanding older population. By that time, it had become clear that the mainstay of retirement research, the Retirement History Study, or RHS (conducted from 1969 to 1979), was no longer adequately addressing contemporary retirement issues. For example, the RHS sample underrepresented women, Blacks, and Hispanics who, by the mid-1980s, accounted for a larger portion of the labor force than in the past. The RHS also did not ask about health or physical or mental function, all of which can impact the decision and ability to retire. Moreover, research on the retirement process was fragmented, with economists, sociologists, psychologists, epidemiologists, demographers, and biomedical researchers proposing and conducting studies within their own “silos,” often without regard to the relevant research activities of other disciplines.

Determining that a new approach was needed, an Ad Hoc Advisory Panel convened by the NIA, a component of the

National Institutes of Health, recommended in early 1988 the initiation of a new, long-term study to examine the ways in which older adults' changing health interacts with social, economic, and psychological factors and retirement decisions. Government experts and academic researchers from diverse disciplines set about to collaboratively create and design the study. Ultimately, relevant executive agencies and then Congress recognized the value of this major social science investment, and the HRS was established. Today, the study is managed through a cooperative agreement between the NIA, which provides primary funding, and the Institute for Social Research at the University of Michigan, which administers and conducts the survey.

Many individuals and institutions have contributed to the scrupulous planning, design, development, and ongoing administration of the study since its inception. We are especially grateful for the study's leadership at the University of Michigan's Institute for Social Research in Ann Arbor, specifically HRS Director Emeritus and Co-Principal Investigator **F. Thomas Juster**, who led the effort to initiate the HRS and held the reins until 1995, and to **Robert J. Willis** and **David R. Weir**, the study co-directors. We also acknowledge the vital contributions of the HRS co-investigators, a multidisciplinary group of leading academic researchers at the University of Michigan and other institutions nationwide.

We thank the HRS Steering Committee and working groups, which have provided critical advice about the study's design and monitored its progress, and the NIA-HRS Data Monitoring Committee, an advisory group comprised of independent members of the academic research community and representatives of agencies interested in the study. In particular, we extend our appreciation to the late **George Myers** and to **David Wise**, the past chairs of the monitoring committee, and to **James Smith**, the

current chair, who also served as chair of the Ad Hoc Advisory Panel. An extraordinary number of researchers and others have been involved in the review, conduct, and guidance of the HRS, but special thanks are due to the co-investigators and members of the Data Monitoring Committee (see Appendix B).

In addition, we thank the Social Security Administration, which has provided technical advice and substantial support for the study. Over the HRS's history, other important contributors have included the U.S. Department of Labor's Pension and Welfare Benefits Administration, the U.S. Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation, and the State of Florida.

Many people have contributed to the development of this publication. In particular, we thank **Kevin Kinsella** of the International Programs Center, Population Division, U.S. Census Bureau, for his analytic expertise and information-gathering skills. A special note of appreciation is due to **Carol D. Ryff**, Institute on Aging, University of Wisconsin; and **Richard Woodbury**, National Bureau of Economic Research, for providing text and analysis of some of the secondary sources used in this report.

We also thank **Michael D. Hurd**, RAND Labor and Population; **Linda J. Waite**, Center on Aging, National Opinion Research Center, University of Chicago; and **James P. Smith**, RAND Labor and Population, who contributed data and references. **Mohammed U. Kabeto** and **Jody Schimmel**, research associates at the University of Michigan, were responsible for providing the data tabulations that form the basis of many of the report figures.

For their careful review of and suggestions regarding various chapters, we are grateful to **Linda P. Fried**, Center on Aging and Health, Johns Hopkins Bloomberg School of Public Health;

Alan L. Gustman, Department of Economics, Dartmouth College; **John Haaga**, NIA Behavioral and Social Research Program; **John C. Henretta**, Department of Sociology, University of Florida; **F. Thomas Juster**, Survey Research Center, University of Michigan and Director Emeritus of the HRS; **David Laibson**, Department of Economics, Harvard University; **Kenneth M. Langa**, Department of Internal Medicine, University of Michigan; **Rose M. Li**, Rose Li & Associates, Inc.; **Olivia S. Mitchell**, The Wharton School, University of Pennsylvania; **Beth J. Soldo**, Population Studies Center, University of Pennsylvania; **Robert B. Wallace**, Department of Epidemiology, University of Iowa; and **David R. Weir** and **Robert J. Willis** of the Institute for Social Research, University of Michigan.

We also thank **Susan R. Farrer**, JBS International, Inc., for her overall editing of this report. **Vicky Cahan**, director of the NIA Office of Communications and Public Liaison, also contributed her editing skills, and she and **Freddi Karp**, NIA's publications director, were instrumental in the publication process. **Cathy Liebowitz**, HRS project associate at the University of Michigan, and **Rose M. Li**, Rose Li & Associates, Inc., rendered invaluable contracting and information management services. **Jennie Jariel**, **Kerry McCutcheon**, and **John Vance**, Levine & Associates, Inc., developed the graphics and layout.

Most importantly, we thank the HRS's most valuable asset—the thousands of HRS participants who, for more than a decade, have graciously given their time and have sustained their interest in this study. We salute their contributions, which are, indeed, without measure.

What all of the people involved in the HRS have created is one of the largest and most ambitious national surveys ever undertaken. The study's combination of data on health, retirement, disability, wealth, and family circumstances offers unprecedented opportunities to analyze and gain insight into our aging selves. This publication is designed to introduce these opportunities to a wider audience of researchers, policymakers, and the public to help maximize the use of this incredible research resource. We invite you to explore in these pages just a sample of what the HRS has already told us and to examine its potential to teach us even more.

Richard J. Hodes, M.D.

Director

National Institute on Aging
National Institutes of Health

Richard Suzman, Ph.D.

Director, Behavioral and

Social Research Program,
and HRS Program Officer

National Institute on Aging
National Institutes of Health

LIST OF FIGURES AND TABLES

FIGURES

-
- A-1** Growth in Number of HRS Publications
 - A-2** The Allocation of HRS Interview Time by Broad Topic
 - A-3** The HRS Longitudinal Sample Design
-
- 1-1** Health Status, by Age: 2002
 - 1-2** Health Status, by Race/Ethnicity: 2002
 - 1-3** Selected Health Problems, by Age: 2002
 - 1-4** Severe Cognitive Limitation, by Age and Gender: 1998
 - 1-5** Severe Depressive Symptoms, by Age: 2002
 - 1-6** Insurance Coverage for Persons Ages 55-64, by Race/Ethnicity: 2002
 - 1-7** Service Use in the Past Two Years, by Age: 2002
 - 1-8** Health Service Use, by Race/Ethnicity: 2002
 - 1-9** Average Out-of-Pocket Medical Expenditure, by Age: 2000-2002
 - 1-10** Components of Medical Out-of-Pocket Spending, by Age: 2000-2002
 - 1-11** Limitation in Instrumental Activities of Daily Living, by Age: 2002
 - 1-12** Limitation in Activities of Daily Living, by Age: 2002
 - 1-13** Health Limitations and Work Status, Ages 55-64: 2002
 - 1-14** Percent Dying between 1992 and 2002 Among the Original HRS Cohort, by Subjective Survival Outlook in 1992
 - 1-15** Percent of Respondents Age 70 and Older Dying Between 1993 and 2002, by Subjective Survival Outlook in 1993
 - 1-16** Health Conditions Among Workers Age 55 and Over: 2002
-
- 2-1** Full-Time and Part-Time Work, Ages 62-85: 2002
 - 2-2** Retirement Pattern for Career Workers in the First HRS Cohort: 1992-2002
 - 2-3** Absolute Difference in Percent of Career Workers Who Are Retired, by Age and Race/Ethnicity: 1992-2002
 - 2-4** Stress on the Job, by Age: 2002
 - 2-5** Occupation of Workers Age 70 and Older: 2002
 - 2-6** Self-Employment Among Workers, by Age: 2002
 - 2-7** Willingness to Consider Changing Jobs, by Age: 2000
 - 2-8** Motivations to Stop Working Between 2000 and 2002, by Age
 - 2-9** Expectation of Working Full-Time After Age 65, by Education: Respondents Ages 51-56 in 1992, 1998, and 2004
 - 2-10** Change in Educational Attainment of Successive Cohorts in the HRS
 - 2-11** Level of Satisfaction with Retirement: 2000
 - 2-12** Volunteer Work for Charitable Organizations, by Age: 1996-1998
-
- 3-1** Components of Household Income for Married Respondents, by Age and Income Quintile: 2002
 - 3-2** Components of Household Income for Unmarried Respondents, by Age and Income Quintile: 2002
 - 3-3** Mean Income for Married-Person Households, by Self-Reported Health Status: 2002
 - 3-4** Mean Income for Unmarried-Person Households, by Self-Reported Health Status: 2002
 - 3-5** Cumulative Income Effects of New Health Shocks: 1992-2000

- 3-6 Components of Net Household Worth for Married Respondents, by Age and Wealth Quintile: 2002
- 3-7 Components of Net Household Worth for Unmarried Respondents, by Age and Wealth Quintile: 2002
- 3-8 Changes in Women's Household Net Worth, by Marital Status: 1992-1998
- 3-9 Poverty Rate for Widows, by Duration of Widowhood: 1998
- 3-10 Health and Net Worth: 2002
- 3-11 Impact of New Health Problem in 1992 on Total Wealth and Out-of-Pocket Medical Expenses: 1992-1996

- 4-1 Living Situation, by Age: 2002
- 4-2 Living Close Relatives, by Age of Respondent: 2002
- 4-3 Transfers to/from Parents and Their Children, by Age and Marital Status of Parent: 2002
- 4-4 Receipt of Money, Time, and Co-Residence, for Respondents with and without ADL Limitation: 2002
- 4-5 Households That Gave at Least \$500 to Their Child(ren) Between 2000 and 2002, by Age of Respondent
- 4-6 Proximity to Children, by Age of Respondent: 2002
- 4-7 National Annual Cost of Informal Caregiving for Five Chronic Conditions: Circa 1998
- 4-8 Grandparent Health, by Level of Care Provision to Grandchildren: 1998-2002

TABLES

- 1-1 Health Problems, by Age: 2002
- 1-2 Insurance Coverage, by Marital Status and Work Status: 2002
- 1-3 Prescription Drug Coverage and Likelihood of Filling Prescriptions, by Age: 1998
- 1-4 Supplement Use: 2000

- 2-1 Labor Force Status of Not-Married and Married HRS Respondents: 2002
- 2-2 Job Requirements of Employed Respondents, by Age: 2002
- 2-3 Job Characteristics of Employed Respondents, by Age: 2002
- 2-4 Expected Retirement Ages, by Pension Coverage Characteristics
- 2-5 Retirement Satisfaction, by Defined-Benefit Pension Receipt and Retirement Duration: 2000
- 2-6 Expected and Actual Changes in Retirement Spending: 2000-2001

- 3-1 Social Security Benefit Acceptance, by Age and Retirement Status: Data from the 1990s
- 3-2 Average and Median Household Wealth, by Wealth Component: 2000
- 3-3 Mean Household Net Worth, by Health of Husband and Wife: 1992
- 3-4 Health Status and Household Portfolio Distributions: Data from the 1990s

- 4-1 Distribution of Expected Bequests, by Parent Cohort and Selected Wealth Percentile
- 4-2 Type of Respondent Transfers to Parents, by Age of Respondent: 2002

NOTE: The figures and tables in this report are based on HRS 2002 data unless otherwise indicated.



INTRODUCTION



INTRODUCTION

Every 2 years, thousands of older Americans tell their stories. Quietly, compellingly, they answer questions about every aspect of their lives—how they are feeling, how they are faring financially, how they are interacting with family and others. They do this as participants in the U.S. Health and Retirement Study (HRS), one of the most innovative studies ever conducted to better understand the nature of health and well-being in later life. The HRS's purpose is to learn if individuals and families are preparing for the economic and health requirements of advancing age and the types of actions and interventions—at both the individual and societal levels—that can promote or threaten health and wealth in retirement. Now in its second decade, the HRS is the leading resource for data on the combined health and economic circumstances of Americans over age 50.

During each 2-year cycle of interviews, the HRS team surveys more than 20,000 people who represent the Nation's diversity of economic conditions, racial and ethnic backgrounds, health, marital histories and family compositions, occupations and employment histories, living arrangements, and other aspects of life. Since 1992, more than 27,000 people have given 200,000 hours of interviews.

The HRS is managed jointly through a cooperative agreement between the National Institute on Aging (NIA) and the Institute for Social Research (ISR) at the University of Michigan. The study is designed, administered, and conducted by the ISR, and decisions about the study content are made by the investigators. The principal investigators at the University of Michigan are joined by a cadre of co-investigators and working group members who are leading academic researchers from across the United States in a variety of disciplines, including economics, medicine, demography, psychology, public health, and survey methodology. In addition, the NIA is advised by a Data Monitoring Committee charged with maintaining HRS quality, keeping the survey relevant and attuned to the technical needs of researchers who use the data, and ensuring that it addresses the information needs of policymakers and the public.

Since the study began, 7,000 people have registered to use the data, and nearly 1,000 researchers have employed the data to publish more than 1,000 reports, including more than 600 peer-reviewed journal articles and book chapters, and 70 doctoral dissertations. **Figure A-1** shows that the number of studies using HRS data has grown rapidly as the scientific community becomes more aware of the richness and availability of the HRS data.

In the coming years, the NIA seeks to expand even further the use of the HRS database, viewed by the Institute and experts worldwide as a valuable national research resource in aging. This publication seeks to engage new audiences of scientists, policymakers, media, and other communities with an interest in aging to use this treasure trove of data, by showcasing how the HRS can help examine the complex interplay of health, economic, and social factors affecting the lives of older people and their families.

The chapters are organized into several broad themes. This introduction presents an overview of the HRS objectives, design, content, and uses. Subsequent chapters present content on health, work and retirement, income and wealth, and family characteristics and

intergenerational transfers. Data highlights are presented throughout.

OBJECTIVES AND DESIGN OF THE HRS

The HRS collects data to help:

- Explain the antecedents and consequences of retirement
- Examine the relationships among health, income, and wealth over time
- Examine life cycle patterns of wealth accumulation and consumption
- Monitor work disability
- Examine how the mix and distribution of economic, family, and program resources affect key outcomes, including retirement, “dissaving,” health declines, and institutionalization

Designed over 18 months by a team of leading economists, demographers, psychologists, health researchers, survey methodologists, and policymakers, the study set out to provide each of these sciences with ongoing data collected in a methodologically sound and sophisticated way. **Figure A-2** indicates the share of time during the hour-plus HRS interview that is devoted to three

FIG. A-1
GROWTH IN NUMBER OF HRS PUBLICATIONS

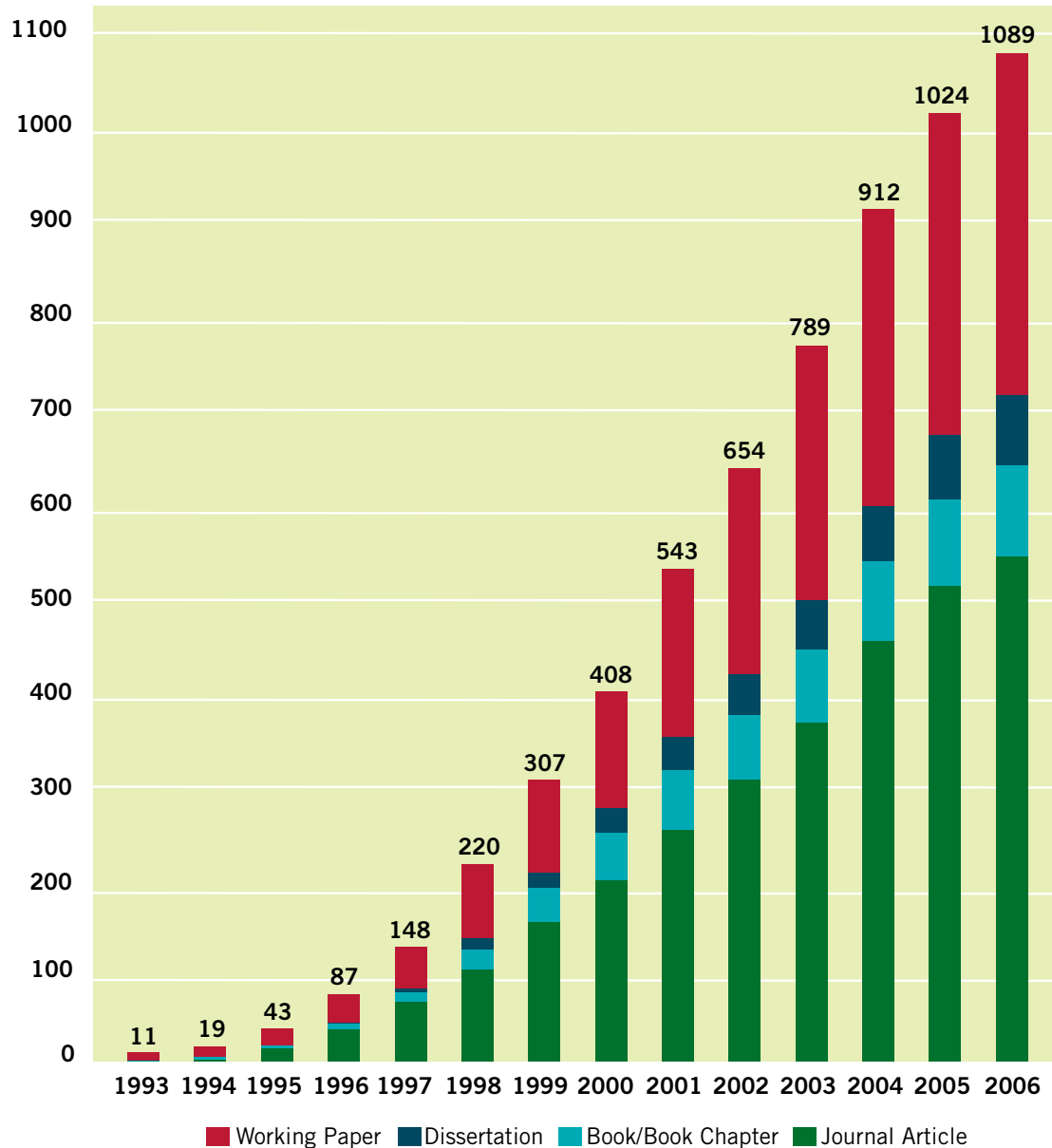
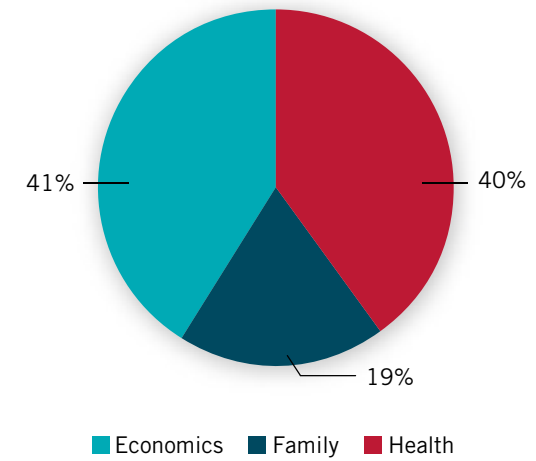


FIG. A-2
THE ALLOCATION OF HRS INTERVIEW TIME BY BROAD TOPIC



broad areas of inquiry—economics, health, and family. Within these categories, the HRS specifically focuses on:

Economic Circumstances

The HRS collects detailed information about older Americans' economic circumstances—sources and amounts of income; the composition and amounts of assets; and entitlements to current and future benefits such as those provided through Social Security, Medicare, Medicaid, employer pension plans, and employer-sponsored health insurance. Data describing the movement of assets, including gifts and bequests, time (e.g., to provide daily living assistance), and housing within families, are also collected, as are data about earnings, savings, and spending of individuals and families as they approach retirement and over the course of their retirement until death.

Occupations and Employment

Occupation and employment information collected by the HRS covers job characteristics, job mobility, work hours, attitudes toward retirement, employer-provided benefits (including health insurance, pensions, 401(k) plans, and other employer-sponsored saving programs), retirement benefits, and early retirement incentive offers.

Health and Health Care

The HRS collects information about chronic illness, functional ability, depression, and self-assessed health status, and examines health-related behaviors such as smoking, alcohol use, and exercise. Health care utilization data gathered through the study describe physician visits, hospitalizations, nursing home stays, surgeries, dental care, prescription drug use, use of assistive devices (e.g., eyeglasses and walkers), and receipt of caregiving services, as well as health and long-term care insurance coverage, out-of-pocket medical costs, and receipt of assistance with medical expenses.

In the 2006 data collection, the HRS expanded to include biological information about the participants in an updated effort to match biological factors with health and social data. This new effort records participants' height and weight, measurements of lung function, blood pressure, grip strength, and walking speed. It also collects small samples of blood to measure cholesterol and glycosylated hemoglobin (an indicator of blood sugar control) levels, and DNA from salivary samples for future genetic analyses.

Cognition

The HRS is unique among large surveys in its use of direct measures of cognition, drawn from established clinical instruments. These measures provide invaluable data on cognitive change with aging and the impact of dementia on families.

They have also found new application in studies of economic behavior and survey response patterns.

Living and Housing Arrangements

The survey explores the relationships between people's living arrangements and the availability or use of long-term care services such as nursing home residence, services offered to residents living in other housing arrangements, and special housing features for people who are physically impaired. It also gathers data about the type of housing structure in which HRS participants live, housing ownership or financial arrangements, entry fees or association payments, and the sharing of housing with children or others.

Demographics and Family Relationships

The HRS gathers standard demographic facts such as age, racial/ethnic background, education, marital status and history, and family composition. Among married participants, detailed health and economic information is collected from both spouses. General demographic information about HRS participants' parents, children, and siblings is also gathered. In addition, survey interviews document the relationships among family members and the nature of intergenerational family supports, including financial transfers, caregiving, joint housing arrangements, and time spent with family members.

HOW CAN THE HRS DATA BE USED?

The research team that designed the HRS made a number of difficult decisions about how many people to include in the survey, whether to survey the same people over time or to survey new participants, how often to conduct interviews, and what questions to include in the interviews. The outcome of these decisions is a "steady state" model that:

- Is nationally representative of the population over age 50
- Follows individuals and their spouses from the time of their entry into the survey until death
- Introduces a new 6-year cohort of participants every 6 years (as detailed elsewhere in this chapter)

This design allows researchers to use the data in a number of important ways:

Analyzing Individual Aging

Regular re-interviews with HRS participants are an essential feature of the survey design. Analysts can follow individuals' evolving circumstances and answer general questions about what happens in families as their members age. For example, analyses of the data can reveal the extent to which people spend down their assets as they age, find out whether people hold steady employment or move into and out of the labor force, and assess the dynamics of health deterioration and improvement with age. Further important questions to be explored ask: What are the circumstances leading up to major life transitions such as retirement or health events? How do people respond to those transitions? What are the consequences of those transitions?

Analyzing Trends

The HRS is a rich resource for exploring national trends in health and economic status over time. It allows for examination of cohort differences, for example, by comparing the characteristics and behavior of 61-year-olds in 1992 with the characteristics and behavior of 61-year-olds in 2002. The data can show whether people have more or fewer financial assets now than in previous years, are more or less likely to work, and are more or less likely to be caring for an aging parent or providing childcare for a grandchild. Analysts

UNIQUE FEATURES OF THE HRS

Among the HRS's important contributions to the study of aging and to social science research:

- **The HRS offers the scientific community open access to in-depth, longitudinal data about adults over age 50, enabling researchers to explore critical aging-related concerns.** Since the study began in 1992, 7,000 qualified scientists have registered to use the data, and nearly 1,000 researchers have tapped the data to produce more than 1,000 papers and dissertations, including over 600 peer-reviewed journal articles and book chapters (Figure A-1).
- **The study's broad national representation allows it to look at the older population in general, as well as the great diversity and variability of aging.** Thus, while for most people retirement is a relatively smooth transition for which they have planned and prepared, there are important exceptions. One study using HRS data showed that households that are otherwise similar in many respects, including total lifetime income, nevertheless reach retirement with very different levels of wealth, implying very different patterns of saving and consumption (Venti and Wise 1998).
- **The HRS helps researchers to investigate both current issues and changes over time.** For example, HRS data from before 2006 have shown that people age 65 and older were less likely than younger adults to have prescription drug insurance coverage. Research using the data has further shown that, regardless of age, people without prescription drug coverage are less likely than those with it to fill all of their prescriptions, posing an increased risk for adverse health outcomes (Heisler et al. 2004). The HRS also is actively following the impact of the new Medicare Part D prescription drug benefit on medication use and ultimately on the older population's health.
- **The HRS permits researchers to probe the impacts of unexpected health events, such as a cancer diagnosis, heart attack, stroke, or the onset of chronic disease on other aspects of individuals' lives.** For example, analyses using the HRS data have shown that household income and wealth decline considerably after a "health shock" and that the income losses persist for at least a decade (Smith 2003). Further, much of the loss of household wealth comes from loss of earnings rather than high average out-of-pocket medical expenses, suggesting that some people are under-insured for disability. The HRS also is one of the first national health surveys to measure cognitive health and cognitive-impairment risk factors at the population level.
- **The HRS, along with other studies worldwide that were based on the its design, allows for comparisons of trends in aging and retirement worldwide.** Cross-national exchange of information in developing the other studies has brought new ideas and approaches, both for the other studies and the HRS. For example, the 2006 HRS survey wave gathered biomarker data, a key feature of the English Longitudinal Study of Ageing (ELSA). HRS and ELSA data also were used to compare the health of the U.S. and English White populations, finding that the English population was significantly healthier even after controlling for weight, exercise, smoking, and alcohol consumption (Banks et al. 2006). For more about these studies, see the box on page 18.

can also track trends in age-adjusted health and function, and they can investigate whether or not smoking, alcohol use, and fitness behaviors are changing. Use of the survey to study trends over time depends less on following individuals as they age and more on comparisons of similarly situated individuals at different points in time.

Understanding Group Differences

By representing the U.S. population as a whole, the HRS provides researchers a way to examine and compare circumstances across income, racial/ethnic, gender, and other subgroups. For example, the financial resources of people with the least income and those at the median and in the highest income bracket can be compared. The data can be used to contrast outcomes for people who have suffered heart attacks with those of people who develop diabetes, dementia, arthritis, or cancer. They also permit targeted analyses of the characteristics of people whose health status or poverty may make them particularly vulnerable, including the study of how well government safety nets protect vulnerable individuals. The data further can look at differences among married and unmarried people; those with and without children; and those who retire young, who retire at typical ages, and who continue working past standard retirement ages.

Exploring Causality

The HRS survey design supports analyses of what causes things to happen. Collection of such a wide range of information about families over time enables analyses of how older adults' circumstances change and how one dimension of their lives relates to other dimensions. For instance, it is interesting that many Americans choose to retire at relatively young ages, but critical questions for policymakers are why people retire young and whether they can support themselves over the course of long retirement spans.

As HRS data accumulate over time, scientists hope to understand better a broad array of causal issues. For example, the HRS data might be used to determine specifically why some older Americans fall into poverty, the propensity for certain smokers to quit while others continue smoking, factors that lead some people to leave large bequests and others none, the effect of employer-provided health insurance or “Medigap” insurance on retirement decisions or the use of medical services, and why people with similar functional ability choose different living arrangements and different forms of care. The data can also be used to explore the reasons why some people save far more than others, even if they have equivalent salaries and life circumstances. Additionally, HRS analyses can identify obstacles that delay retirement in order to pay for the extra years of life, given the rise in life expectancy and improved health.

Simulating Policy Outcomes

Armed with some knowledge of causality, researchers can use the HRS data to simulate what might happen under different policy scenarios and the likely implications of aging-related policy reforms. For example, they can ask: What will happen to decisions about work at older ages as the earnings test on Social Security benefits is eliminated? What would happen to retirement decisions if the age of eligibility for early Social Security benefits were increased from 62 to 65? To what extent would the economic circumstances of widows be affected if Social Security survivorship benefits were increased? What is the impact of the new Medicare Part D prescription drug benefit? What would happen to saving rates if the contribution limits on individual retirement accounts were raised?

STUDY INNOVATIONS

The HRS is unique because of several survey innovations. These include:

Measurement of Income and Assets

Surveys asking about income and assets historically have been troubled by participants' refusal to answer financial questions or inability to answer them knowledgeably. Further, many surveys also have not accounted for major components of assets or income and/or have used measures that do not truly reflect assets and income. The HRS has made major advances in both of these areas. The study developed a technique known as “random-entry bracketing,” which reduces the number of nonresponses by eliciting ranges of values from respondents who would otherwise give no information at all. To improve the measurement of income from assets, the survey brought together questions about the ownership of certain assets (e.g., stocks and bonds) and the income obtained from those assets. In addition, traditional measures of income and wealth have been integrated with detailed data about Social Security, pensions, and other future entitlements—a significant accomplishment of the HRS, particularly because future entitlements represent a major component of the financial status of older Americans. These new methods have been widely adopted by many other surveys.

Examination of Participants' Expectations

The decisions people make as they age are influenced not only by past and current circumstances, but also by what they expect to happen in the future. Most surveys focus on measuring current circumstances and, to some extent, what people can remember about the past. An exciting innovation in the HRS is the exploration of participants' future expectations. This novel approach yields valuable information about how long people

PROTECTING HRS PARTICIPANT CONFIDENTIALITY

The HRS by its nature asks questions about some of the most personal and confidential aspects of participants' lives. Nothing is more important to the NIA, the University of Michigan, and the HRS study team than protecting the confidentiality of the respondents and what they have shared. This protection of privacy is also an essential element in ensuring people's participation in this type of extensive, long-term social science survey.

To ensure privacy and confidentiality, all study participants' names, addresses, and contact information are maintained in a secure control file. All personnel and affiliates with access to identifying information must sign a pledge of confidentiality, which explicitly prohibits disclosure of information about study participants.

The survey data are only released to the research community after undergoing a rigorous process to remove or mask any identifying information. In the first stage, a list of variables (such as State of residence or specific occupation) that will be removed or masked for confidentiality is created. After those variables are removed from the data file, the remaining variables are tested for any possible identifying content. When testing is complete, the data files are subject to final review and approval by the HRS Data Release Protocol Committee.

Data ready for public use are made available to qualified researchers via a secure website. Registration is required of all researchers before downloading files for analyses. In addition, use of linked data from other sources, such as Social Security or Medicare records, is strictly controlled under special agreements with specially approved researchers operating in secure computing environments that are periodically

audited for compliance. The HRS also obtained a Certificate of Confidentiality from the National Institutes of Health in order to protect the data from any forced disclosure.



expect to work in the future, their estimates of how long they will live, the likelihood of giving major financial assistance to family members in the future, whether or not they expect to leave a bequest and the amount of that bequest, and whether they think they will enter a nursing home or move to a new home or other living arrangement in the future. Initial analysis of these data suggests that expectations have an important influence on the decisions that people make.

Inclusion of Experimental Modules

There are limits to the number of questions that can be asked and answered in a population survey, and there is great value in maintaining that same core of questions in a longitudinal study. Alternative vehicles may be needed, however, to allow researchers to explore narrowly focused topics or test new survey ideas. The HRS uses “experimental modules”—short sequences of questions administered to randomly selected subgroups of participants at the end of the survey. To date, more than 70 experimental modules have asked about physiological capacity, early childhood experiences, personality, quality of life, employment opportunities, use of complementary and alternative medicines, parental wealth, activities and time use, nutrition, medical directives, living wills, retirement expectations and planning, sleep, and functional ability. Appendix A provides more information about these modules.

LINKAGES TO OTHER DATASETS

Despite the comprehensive nature of the HRS, limitations exist in terms of what can be learned from population interviews. To provide more detailed and elaborate information in particular areas, the HRS team asks participants for permission to link their interview responses to other data resources, as described below. Linked administrative

records are available only as restricted data under special agreements with a highly restricted group of individual researchers that guarantee security and confidentiality.

Social Security Records

The Social Security Administration keeps detailed records on the past employment and earnings of most Americans. For those who have applied for Social Security payments, records of benefit decisions and benefits paid, including those paid through the Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI) programs, are available to researchers. By linking these records to HRS participants’ interview responses, a significantly richer body of data can be analyzed to better understand the relationships between health and economic circumstances, public and private retirement policies, and the work and retirement decisions that people make as they age.

Medicare Records

Through the administration of the Medicare program, the Centers for Medicare & Medicaid Services (formerly the Health Care Financing Administration) maintain claims records for the medical services received by essentially all Americans age 65 and older and those less than 65 years who receive Medicare benefits. These records include comprehensive information about hospital stays, outpatient services, physician services, home health care, and hospice care. When linked to the HRS interview data, this supplementary information provides far more detail on the health circumstances and medical treatments received by HRS participants than would otherwise be available. For instance, these Medicare records will enhance research on the implications of health changes, the influence of health-related behaviors on health, the relationships

between health and economic circumstances as they evolve jointly over the course of later life, and the impact of supplementary insurance on medical care decisions.

Employer Surveys and Related Data

Data from HRS interviews have been supplemented with information obtained from or about participants’ employers, without revealing the identities of HRS participants to employers. One important area of focus is pension plans. While most pension-eligible workers have some idea of the benefits available through their pension plans, they generally are not knowledgeable about detailed provisions of the plans. By linking HRS interview data with specific information on pension-plan provisions, researchers can better understand the contribution of the pension to economic circumstances and the effects of the pension structure on work and retirement decisions.

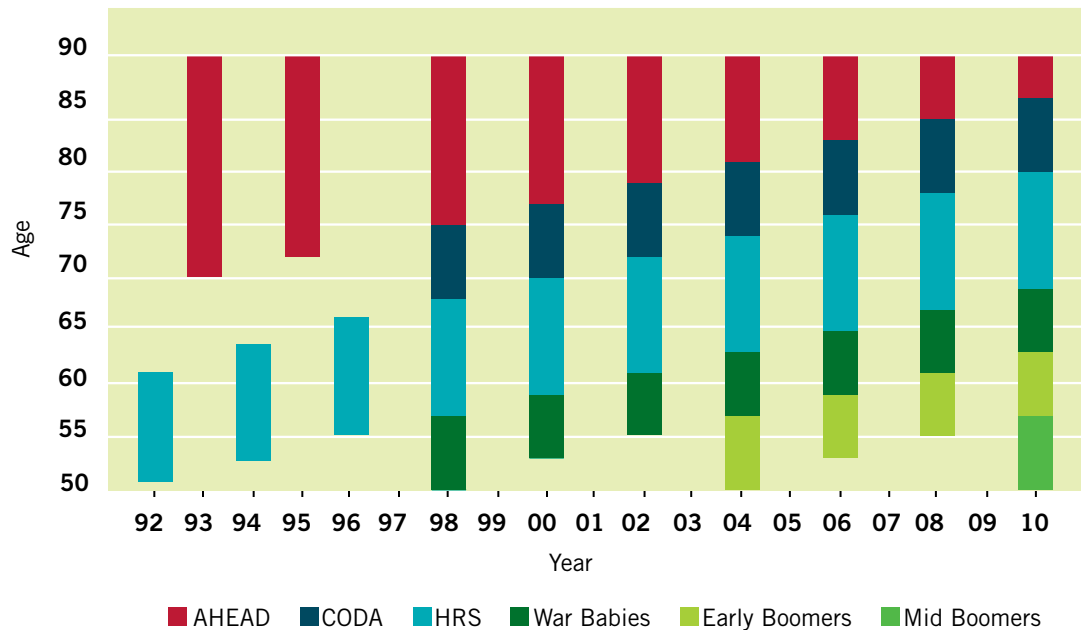
BACKGROUND AND DEVELOPMENT OF THE HRS

The HRS began as two distinct though closely related surveys that were merged in 1998 and are administered under the cooperative agreement between the NIA and the University of Michigan’s Institute for Social Research. The first study, referred to as the “original HRS,” was initially administered in 1992 to a nationally representative sample of Americans between the ages of 51 and 61 (strictly speaking, born in the years 1931 through 1941). In the case of married couples, both spouses (including spouses who were younger than 51 or older than 61) were also interviewed. These participants continue to be contacted every 2 years as part of the ongoing HRS.

The second survey, originally referred to as the Study of Assets and Health Dynamics Among the

FIG. A-3

THE HRS LONGITUDINAL SAMPLE DESIGN



Oldest Old, or AHEAD, was first administered in 1993 to a nationally representative sample of Americans age 70 and older (strictly speaking, born in 1923 or earlier). Again, in the case of married couples, interviews were conducted with both spouses. About 8,000 people were interviewed as part of the 1993 AHEAD survey. These individuals were re-interviewed in 1995 and 1998, and they, too, continue to be interviewed on the 2-year cycle of the study.

The original HRS and AHEAD surveys were integrated in 1998, and the consolidated project is now referred to as the Health and Retirement Study. Two new groups of survey participants

(including spouses) were added in 1998. The first group consists of people in the age group that falls between the original HRS and AHEAD samples. Born between 1924 and 1930 and raised during the Great Depression, these participants are called the Children of the Depression Age, or CODA, cohort. The second group added in 1998 was the first “refresher cohort” brought in to replenish the sample of people in their early 50s as the original HRS cohort aged. It is known as the War Baby cohort, consisting of people born between 1942 and 1947 and their same-age or younger spouses.

Figure A-3 shows the past and projected evolution of the HRS sample, including survey years for the

different participant cohorts. In the future, the research team plans to supplement the sample with groups of younger people as they reach their 50s. For example, participants born between 1948 and 1953—the early years of the post-World War II baby boom—were added to the HRS sample in 2004. By continuing to “refresh” the sample, the HRS will provide a long-term source of data on the transition from middle age to the initial stages of retirement and beyond. (For a more complete overview of and background to the development of the HRS, see Juster and Suzman 1995.)

THE HRS: A MODEL FOR OTHER COUNTRIES

Many nations, particularly in Europe, are further along than the United States in population aging, and they have found the multidisciplinary, longitudinal nature of the HRS appealing as a way to obtain a holistic picture of health and retirement trends in their graying populations.

One of the first nations to put such a study in place was Great Britain, where a team of researchers in the late 1990s began planning the English Longitudinal Study of Ageing (ELSA), a survey that is directly comparable to the HRS. ELSA is supported by grants from several departments of the British Government, as well as by the U.S. National Institute on Aging (NIA). The British Government supports ELSA because of its ability to inform both short- and long-term policy options for an aging population. The NIA supports ELSA because of the benefit from comparative analyses of data obtained from people living under very different health and social services arrangements and economic policies. The first rounds of ELSA data were collected in 2002 and 2004, and subsequent waves began in 2006.

The success of the HRS and ELSA has spawned a major international study that now tracks health and retirement trends in Europe. SHARE—the Survey of Health, Ageing and Retirement in Europe—involves Sweden, Denmark, France, Belgium, The Netherlands, Germany, Switzerland, Austria, Spain, Italy, and Greece. Approximately 130 researchers from the participating nations have been organized into multidisciplinary country teams and cross-national working groups, assisted by a number of expert support and advisory teams.

The European study also features many technical innovations designed to maximize cross-national comparability. For example, it employs a single, centrally programmed survey instrument that uses an underlying language database to create country- and language-specific instruments.

The initial success of SHARE generated extraordinary interest and led to extending this project to Israel, Ireland, the Czech Republic, and Poland.

Population aging is also becoming a major policy concern in developing countries. The HRS concept is being applied in the Mexican Health and Aging Study (MHAS), the first such effort in a developing country. The MHAS is a prospective panel study of Mexicans born prior to 1951. Its 2001 baseline survey was nationally representative of the older Mexican population and similar in design and content to the HRS. A second round of data collection was undertaken in 2003. In addition to the range of issues that can be considered using HRS data, the MHAS offers an opportunity to explore aging and health dynamics in the context of international migration.

The HRS and SHARE concepts have also been emulated in Eastern Asia. South Korea is already planning the second wave of the Korean Longitudinal Study on Aging, while planning for initial waves is well advanced in China, Thailand, and Japan, and initial planning for an Indian HRS has begun.



HEALTH



CHAPTER 1: HEALTH

A central thrust of the Health and Retirement Study (HRS) is to examine the impact of health status on the decision to stop working. A related goal is to understand the longer-term health consequences of the retirement process. The HRS conceptualizes “health” as a multidimensional construct. By combining measures of respondent health, functional status, and health care usage with economic and family variables, the HRS helps us to understand how health influences—and is influenced by—socioeconomic status through the course of life. As the HRS data grow richer over time and as analytic methodologies improve, researchers increasingly will use the data to answer questions of causation that thus far have eluded social scientists and epidemiologists.

This chapter offers insight into the physical and mental health status, health insurance coverage, and health care utilization of community-dwelling older adults. It also provides a snapshot of the effects of health and unexpected health events on employment, as well as a look at disability and physical functioning among HRS participants.

CHAPTER HIGHLIGHTS

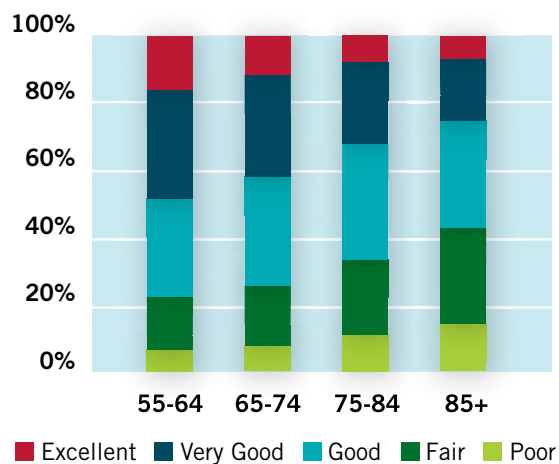
There are wide variations in the health of Americans age 50 and older, with differences that vary by age, race/ethnicity, and lifestyle. According to HRS data:

- **Health varies by socioeconomic status.** One study found that the pattern of disease at age 50 for people with less than a high school education is similar to that at age 60 for people with college degrees.
- **Older Americans are in reasonably good health overall, but there are striking differences by age and by race and ethnicity.** Almost half of HRS participants ages 55 to 64, but only about one quarter of those age 65 and older, say they are in very good or excellent health. White respondents report very good or excellent health at a rate almost double that of Blacks and Hispanics. Studies using HRS data have found that part but not all of these racial disparities can be attributed to differences in socioeconomic status.
- **Health has an important influence on older people’s ability to work.** In 2002, 20 percent of men and 25 percent of women ages 55 to 64 reported a health problem that limited their work activity, but one-fifth of those reporting a health limitation were working in some capacity. More than half of men and one-third of women who left the labor force before the Social Security early-retirement age of 62 said that health limited their capacity to work. Longitudinal data from the HRS have shown that the onset of major health problems, such as a stroke or heart attack, frequently leads directly to withdrawal from the labor force.
- **Heavy smokers underestimate the mortality effects of smoking.** One analysis shows that people who had never smoked, had quit, or were light smokers at the time they were surveyed have a realistic sense of their mortality, their expectations coinciding with actuarial projections. Heavy smokers, however, significantly underestimate their premature mortality, in denial of the potential effects of their smoking habit. Another study found level of education to be the major positive influence on the decision to quit among heart attack survivors.
- **Cognitive health declines with age.** A preliminary study based on HRS data indicates that some 10 percent of people age 70 and older have moderate to severe cognitive impairment, and prevalence rises sharply with age. In the community, an estimated 6 percent of people over 70 have moderate to severe impairment, while some 50 percent of those institutionalized do. The HRS data on cognition are among the first to measure cognitive health at the population level, and these preliminary analyses are being examined further to see how they compare with a number of other estimates, primarily derived from studies in specific communities.

- **Caregiving in the home for older adults with cognitive impairment places a substantial burden on families.** Using HRS data, the total national cost has been estimated at \$18 billion, and the annual cost of caring for a family member with dementia at about \$18,000.
- **The rate of severe depression rises with age.** Severe depression is evident in about 20 percent of people age 85 and older, compared with 15 percent among people age 84 or younger.
- **There are considerable differences in use of the health care system, in health expenditures, and in the availability of insurance by age and by race and ethnicity.** For example, racial and ethnic differences in health insurance coverage persist among older adults not yet eligible for Medicare. One in 14 Whites and 1 in 8 Blacks lack private health insurance, and about 1 in 4 Hispanics do not have private coverage. Hispanics



FIG. 1-1
HEALTH STATUS, BY AGE: 2002
(Percent in each health category)



have the highest probability of not visiting a physician at least once in a given 2-year period.

- **Older people use alternative medicines and supplements to a surprising degree.** Among HRS respondents in the year 2000, more than half say they had used some kind of dietary or herbal supplement. Nearly half had seen a chiropractor, and 20 percent had used massage therapy.
- **White Americans ages 55 to 64 are less healthy than their British counterparts, despite higher overall incomes and higher levels of health care spending.** A comparison of data from the HRS and a parallel study, the English Longitudinal Study of Ageing, showed that the healthiest middle-aged Americans in the study—those in the highest income and education levels—had rates of diabetes and heart disease similar to the least healthy in England—those in the lowest income and education levels.

HEALTH STATUS AND SPECIFIC CONDITIONS

The HRS data on health are based largely on what respondents report about themselves. While self-reported evaluations are inherently subjective—and related to individual personality, outlook, and context—research in a wide variety of cultures and contexts suggests that self-reported health status is a very good predictor of more objective health measures such as chronic illness, hospitalization, and longevity. Individuals' beliefs about their own health status also have been found to influence their expectations of retirement and the retirement process itself.

Figure 1-1 suggests that HRS participants who live in the community consider themselves to be in reasonably good health and that self-reported health status decreases with age. Almost half of HRS participants ages 55 to 64, compared with 42 percent of participants ages 65 to 74, 32 percent ages 75 to 84, and 25 percent age 85 and older, say they are in very good or excellent

health. Conversely, the proportion reporting that they are in fair or poor health increases steadily from 21 percent among people ages 55 to 64 to 43 percent among those age 85 and older.

Gender differences in self-reported health status are small, while differences by race/ethnicity are large. Men are slightly more likely than women to report excellent or very good health (43 percent compared with 41 percent). Only about 25 percent of Black and Hispanic respondents, compared with 45 percent of White respondents, report being in excellent or very good health (**Figure 1-2**). Additionally, about 42 percent of Black and Hispanic participants, compared with 24 percent of White respondents, report their health to be fair or poor.

Most studies find that some, but not all of the racial and ethnic disparities in health can be

attributed to differences in socioeconomic factors such as education, income, and wealth that are related to health and differ by race and ethnicity. One study found that socioeconomic factors explained only a relatively small part of the racial difference in the prevalence of chronic conditions, but that the racial disparity in physical functioning could be almost completely explained by a combination of socioeconomic status differences and the racial differences in chronic conditions (Kington and Smith 1997).

Advancing age is associated with an increasing prevalence of a number of diseases and other health problems. The HRS is uniquely poised to describe these problems in terms of their effects on the everyday function of older people. **Figure 1-3** presents the prevalence of selected health problems reported within different age groups. Arthritis and hypertension are the most common conditions,

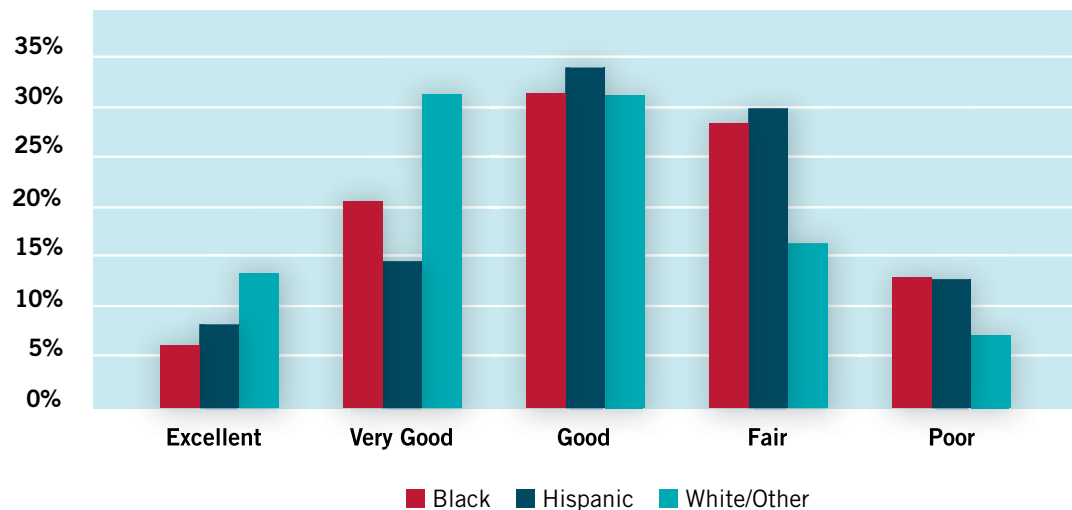
at all ages, followed by heart problems. The likelihood of having (or having had) most problems increases steadily with age, although diabetes, hypertension, and chronic lung disease appear to be somewhat less common above age 85.

Gender differences with regard to health conditions are generally small. The most notable difference pertains to arthritis. Nearly two-thirds of all female respondents but only one-half of male respondents report having this potentially disabling condition.

Several race/ethnicity differences in the prevalence of some conditions are notable. As has been found in other data sources, Blacks have higher rates of hypertension than those of other population subgroups. More than two-thirds of Black HRS participants report having hypertension, compared with one-half of the White and Hispanic participants. Blacks and Hispanics have significantly higher levels of diabetes than do Whites. Whites are most likely and Hispanics least likely to report cancer, lung disease, and heart problems. Hispanics' reported rates of arthritis and stroke also are lower than those of Blacks and Whites.

Co-morbidity, or the combination of multiple chronic problems, is an especially challenging situation for health management. The HRS examines older adults' risk of having multiple chronic health problems. **Table 1-1** summarizes the combined prevalence of six major health problems reported by the 2002 HRS sample: diabetes, hypertension, cancer, bronchitis/emphysema, a heart condition, and stroke. (Arthritis, which is common among all age groups, is not included.) The percentage of people free of chronic problems falls with age, and the percentages with multiple problems increase. Roughly half of the people over age 75 report two or more chronic conditions. However, the burden of co-morbidity appears to

FIG. 1-2
HEALTH STATUS, BY RACE/ETHNICITY: 2002
(Percent in each health category)



stabilize at the oldest ages; the distribution of chronic problems among people 85 and older is very similar to that of those 75 to 84, at least in the community-dwelling population.

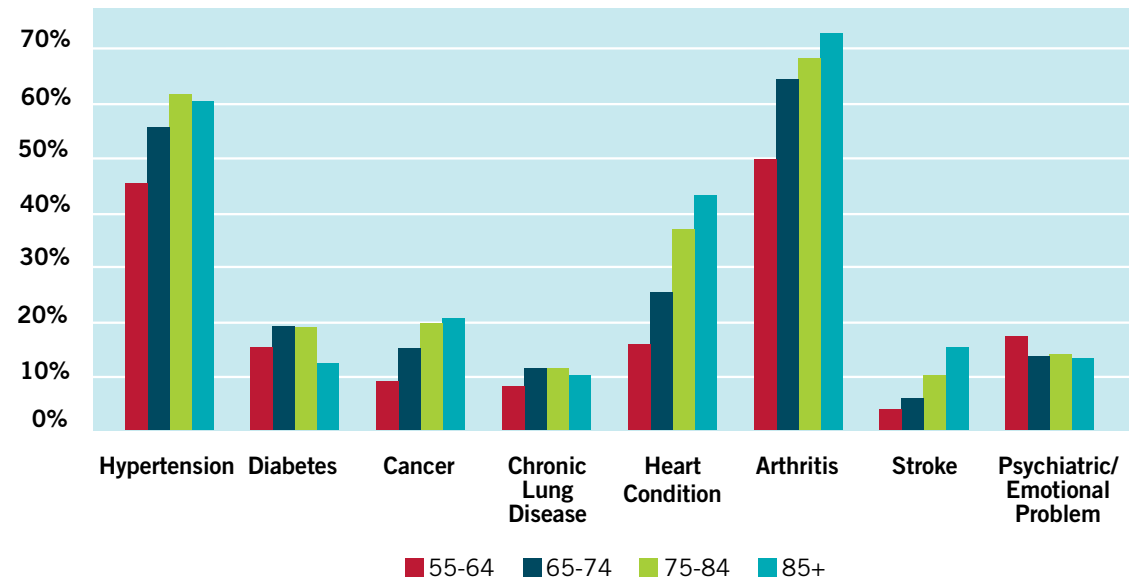
HEALTH BEHAVIORS AND OUTCOMES

With recent and projected increases in national health care expenditures, public attention has focused on preventing unhealthful behaviors and controlling behavioral and lifestyle factors that contribute to disease, disability, and death. The HRS examines several of these health behaviors and risk factors, including smoking, alcohol consumption, and obesity, and helps frame questions designed to inform public health policy in these areas. One book, based on the first four waves of HRS data, is devoted to exploring risk perceptions and choices made by smokers and addressing policy questions such as the efficacy of different educational strategies, class-action suits, and regulation/prohibition (Sloan et al. 2003).

Smoking

Examining the relationship between health beliefs and health behavior, Schoenbaum (1997) investigated whether HRS participants understand the mortality effects of smoking, i.e., do they realize that smoking can shorten one's life? In one survey year, participants were asked how long they expected to live. For "never," "former," and "current" light smokers, survival expectations were quite close to actuarial predictions of life expectancy for their ages. Among current heavy smokers, however, the expectation of reaching age 75 was nearly twice that of actuarial predictions. In other words, heavy smokers significantly underestimated their risk of premature mortality linked with smoking.

FIG. 1-3
SELECTED HEALTH PROBLEMS, BY AGE: 2002
(Percent ever having)



TBL. 1-1
HEALTH PROBLEMS, BY AGE: 2002

Number of Health Problems	Percent of Respondents			
	55-64	65-74	75-84	85+
0	40%	26%	18%	17%
1	35	36	34	34
2	17	24	29	29
3	6	10	16	14
4 or more	2	4	5	6

Notes: Health problems include six major categories: hypertension, diabetes, cancer, bronchitis/emphysema, heart condition, and stroke. Columns may not sum to 100% due to rounding.

Other research has examined whether the perceptions of smokers reflect a true lack of understanding of health risks or a form of indifference or denial. Smith et al. (2001) investigated how subjective beliefs change in response to new information. This study found that when HRS smokers experience smoking-related health shocks, such as a heart attack or cancer diagnosis, they are likely to reduce their expectations of longevity significantly, more so than when they experience general (non-smoking-related) health shocks.

A more traditional analysis of health outcomes addressed the effects of smoking on disability, impaired mobility, health care utilization, and self-reported health (Ostbye et al. 2002). As expected, smoking was strongly related to mortality and self-reported ill health. Researchers were also able to characterize the benefits of quitting smoking. People who had quit smoking in the 15 years

preceding the survey were as likely as those who had never smoked to report good health. Further analysis indicated that males ages 50 to 54 years who are heavy smokers lose approximately 2 years of healthy life, and females in the same age group who are heavy smokers lose about 1.5 years of healthy life, relative to former smokers.

In another study of smoking cessation, Wray and colleagues (1998) analyzed data for smokers who had had heart attacks. Controlling for a variety of health factors, level of education emerged as the major positive influence on the decision by middle-aged HRS participants to quit smoking after the cardiac event.

Alcohol Consumption

Recent reports have suggested that moderate alcohol consumption has potentially healthful effects, but HRS data clearly show that heavy

drinking takes its toll. Perreira and Sloan (2002) analyzed 6 years of HRS data to examine links between excessive alcohol consumption and health outcomes for men. Men who were heavy drinkers (five or more drinks per day) but not functionally impaired in the initial survey year had a four-fold risk of developing at least one functional impairment (including memory problems) during the 6-year follow-up period. This finding held true even when controlling for the effects of smoking and other factors.

Perreira and Sloan (2001) also used multiple waves of HRS data to explore changes in drinking behavior that occurred with and after major health, family, and employment stresses. Two-thirds of the sample did not change their use of alcohol in the 1990s. However, when changes did occur, they were related to several life events: Retirement was associated with increased drinking;

A COMMUNITY-DWELLING SAMPLE

The original HRS (1992) and AHEAD (1993) samples were drawn from community-dwelling individuals and did not include people living in institutions such as nursing homes. This sampling procedure also applies to cohorts added to the study after 1993. Unless otherwise noted, data in the tables and graphs in this report refer only to community-dwelling people and do not include people who have moved into nursing homes after they were initially selected for the study.

The HRS does, however, follow individuals as they move into and out of institutional settings. As the number of study participants in institutions increases, the HRS is becoming an important source of information about this segment of the U.S. population. In certain parts of this report, such as the description of living arrangements in Chapter 4, the HRS nursing home component is included.



hospitalization and the onset of a chronic condition were associated with decreased drinking; and widowhood was associated with increased drinking, but only for a short time.

Ostermann and Sloan (2001) analyzed 8 years of HRS data to examine the effects of alcohol use on disability and income support for people with disabilities. Their analysis demonstrated that a history of problem drinking, especially when combined with recent heavy drinking, was associated with a greater prevalence and incidence of limitations in home and work activities. However, despite increased disability, problem drinkers' higher rates of activity limitations were not associated with a greater likelihood of receiving income support from the Federal Government's Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI) programs.

Obesity

HRS data have been used to document an association between obesity and impairments in physical function that will translate into rising disability rates in the future if obesity trends continue (Sturm et al. 2004). A causal analysis of HRS respondents over age 70 suggested that being overweight or obese (using conventional body mass index measures) makes an older person more likely to become functionally impaired in the future. While this relationship is often complex, obesity appears to have an independent effect on the onset of impairment in strength, lower body mobility, and activities of daily living (Jenkins 2004).

Extra pounds may also be expensive, at least for middle-aged women. Looking at the relationship between weight and financial net worth, Fonda et al. (2004) found that in 1992 the individual net worth of moderately to severely obese women ages 51 to 61 was 40 percent lower than that

of normal-weight peers, controlling statistically for health status, education, marital status, and other demographic factors. These individuals' situation also appears to worsen over time. In 1998, the self-reported individual net worth of moderately to severely obese women in the same cohort (then ages 57 to 67) was 60 percent less than that of their counterparts (an average difference of about \$135,000 in 1998). No such pattern could be found for men. While HRS data allow relationships among obesity, gender, and financial status to be measured in new and important ways, researchers caution that the causal mechanisms underlying these findings are still poorly understood.

Family characteristics may also play a role in obesity risk and how we might intervene to prevent obesity. After adjusting for age, race, income, and several behavioral factors, researchers analyzing HRS data found a positive correlation between number of children and obesity for both women and men (Weng et al. 2004). The association between obesity and family size is an intriguing finding and suggests the need for further exploration of the idea that parents of larger families might be an important target population for obesity prevention.

COGNITIVE FUNCTION

The decline of cognitive function with age is an often-unspoken fear that many people have as they grow older, and the burden of cognitive impairment on individuals, families, caregivers, and society at large is enormous. Severe cognitive impairment is a leading cause of institutionalization of older people. Before 2003, estimates of the prevalence of cognitive impairment had to be derived from local clinic-based studies, typically in urban areas, and extrapolated to the larger population. With the advent of the HRS, and more specifically the AHEAD por-

tion of the study, researchers could attempt for the first time to tap nationally representative data to assess cognitive function in older people.

The HRS is one of the first national health surveys to measure cognitive health at the population level and to examine on a large scale the biological and environmental factors associated with cognition. The HRS measurement of cognition employs two well-tested cognition assessments: the Telephone Interview for Cognitive Status (TICS), a brief, standardized test of cognitive functioning that was developed for use in situations where in-person cognitive screening is impractical or inefficient, and the Mini-Mental State Examination (MMSE), a widely used tool for assessing cognitive mental status. In addition, a special assessment tool for third-party observations, the Jorm IQCODE, is used when a proxy reporter provides an interview on behalf of a respondent. This is an essential tool when cognitive impairment makes an interview otherwise unobtainable.

Initial estimates, while preliminary, indicate that in 1998, approximately 10 percent of the U.S. population age 70 and older had moderate to severe cognitive impairment (Suthers et al. 2003). The prevalence of moderate to severe cognitive impairment among non-institutionalized people was 6 percent, while the level among the institutionalized exceeded 50 percent. On average, the data suggest, a person reaching age 70 with a life expectancy of 14 remaining years will spend 1.5 of those years with moderate or severe cognitive impairment. As the original HRS sample and its additional cohorts age, researchers will be able to update and refine these important data. The analysis also indicated that the prevalence of cognitive impairment increases steeply with advanced age. Among people ages 75 to 79 who participated in the 1998 HRS, fewer than 5 percent had severe

limitation (**Figure 1-4**). After age 80, however, the prevalence rate rises steeply, approaching 20 percent for people age 85 and older.

The HRS also provides valuable information about the need for and provision of caregiving for older people with cognitive impairment. Estimates from the baseline AHEAD survey in 1993 indicated that people with mild impairment received 8.5 more hours of care per week, while those with severe impairment received 41.5 more hours of care per week than their peers with normal cognitive function (Langa et al. 2001). The same study found that valuing this family-provided care at the average hourly wage of a paid home aide, this informal care amounts to \$17,700 per year for an individual with severe impairment, and a total national cost of \$18 billion per year for informal care for all forms of cognitive impairment.

Recent studies suggesting a decline in overall rates of disability among the older U.S. population have prompted researchers to consider the utility of the HRS in measuring trends in cognitive impairment over time. Analyses of HRS data from the 1990s showed a significant decline in the prevalence of severe cognitive impairment among people age 70 and older, from about 6 percent in 1993 to less than 4 percent in 1998 (Freedman et al. 2001, 2002). In contrast, another analysis of the same cohort using additional controls found very little change from 1993 to 2000 in cognitive impairment rates, after adjustment for demographic composition (gender, race, and ethnicity) (Rodgers et al. 2003). Scientists concentrating on the cognitive health aspects of participants in the HRS will continue to examine these contradictory findings in an effort to sort out the national trends.

DEPRESSIVE SYMPTOMS AND DEPRESSION

Mental health, while critically important to the health of the population, is extremely difficult to assess in population surveys. The HRS developers decided at the outset to focus on depression, the most prevalent mental health condition in the older population and a leading cause of disability. At baseline, respondents are given a series of questions to identify major depressive episodes in the prior year. In each wave of the study, respondents are asked about eight common symptoms of depression, taken from the CES-D instrument. In validation studies against the full CES-D battery, the presence of four out of the eight symptoms is associated with clinically significant depression.

THE AGING, DEMOGRAPHICS, AND MEMORY STUDY

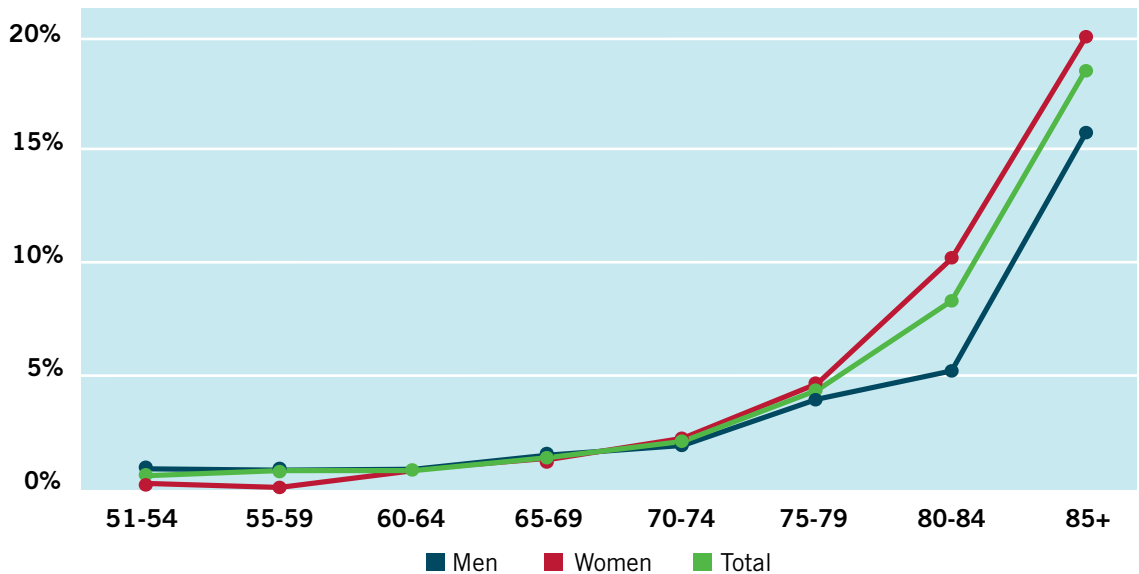
The Aging, Demographics, and Memory Study (ADAMS), a supplement to the HRS, is the largest national study of the prevalence of dementia in the United States. This supplemental study has three goals: first, to establish national estimates of the prevalence of dementia and cognitive impairment without dementia; second, to increase understanding of the natural history of preclinical and clinical dementia, as well as the role of dementia in changing the health and social functioning of older Americans; and third, to use the data collected to assess the validity of HRS cognitive functioning measures as screening tools for cognitive impairment or dementia. The ADAMS also will provide an opportunity to conduct in-depth investigations related to the impact of dementia on formal health care utilization, informal caregiving, and total societal costs for dementia care.

The study is the first of its kind to conduct in-home assessments of dementia on a national scale that represents the U.S. elderly population. The assessments are being conducted through a collaboration with

Duke University. From August 2001 through March 2005, selected HRS participants were visited by a clinical research nurse and psychometric technician, both of whom were specially trained in the evaluation of dementia. Conducted in the presence of a family member, friend, or paid helper, the assessments included obtaining clinical and medical histories, neuropsychological testing, and collecting DNA samples to determine the apolipoprotein E (APOE) genotype. Follow-up assessments have so far been conducted with approximately 30 percent of respondents to gather additional data to clarify trajectories. Additional follow-ups are planned for future years. Information about caregiving and its costs and health services utilization was also collected.

The primary ADAMS dataset consists of 850 respondents from the HRS for whom assessments are completed. The ADAMS data, with restrictions on accessibility and use to protect the confidentiality of participants, were made available for research purposes in early 2007.

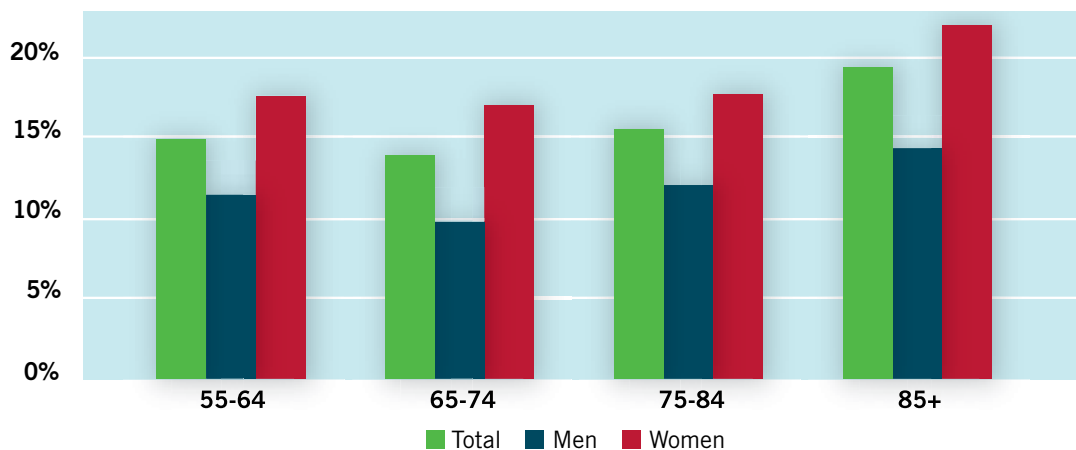
FIG. 1-4
SEVERE COGNITIVE LIMITATION, BY AGE AND GENDER: 1998



Note: Definition of severe cognitive impairment: Errors on half or more of 9 very easy items from a standard geriatric screen for mental status for self-respondents; IQCODE score of 3.9 or higher on Jorm proxy assessment.

Source: HRS 1998.

FIG. 1-5
SEVERE DEPRESSIVE SYMPTOMS, BY AGE: 2002

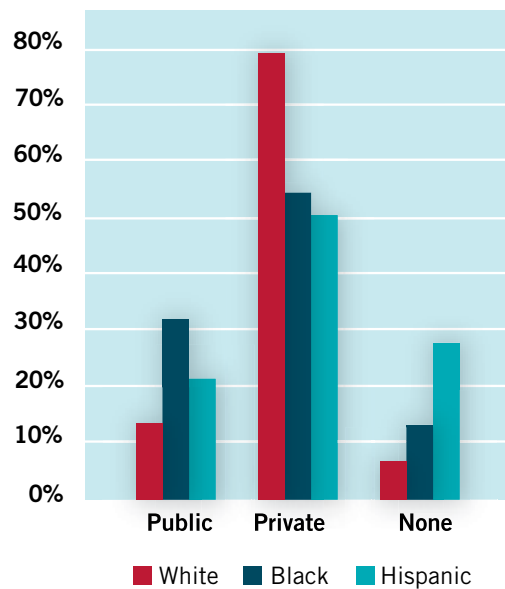


Data for 2002 suggest that the prevalence of severe depression for men and women combined is approximately 15 percent within each 10-year age category between ages 55 and 84 (Figure 1-5) and approaches 20 percent for the 85 and older group. For all of the age groups, women are consistently more likely than men to report severe depressive symptoms.

HRS longitudinal data can help address an important question about the correlation between depression and physical health: Do disease and disability lead to depression, or does depression lead to disease and disability? Blaum (1999) found that depressive symptoms are precursors to the development of future disease. As expected, physical limitations (e.g., the inability to walk several blocks, climb stairs, or lift a 10-pound object) were the strongest predictors of developing a new disease 2 years later, increasing the odds of developing at least one new disease by nearly 50 percent. At the same time, participants age 70 and older who reported having several symptoms of depression were one-third more likely than others to develop a new disease within 2 years. The effect was seen with relatively mild depressive symptoms, such as decreased energy and restless sleep, as well as with more severe clinical depression.

Stopping driving is one activity of daily living that appears to be associated with increased depressive symptoms. An analysis of a 6-year period of early HRS data showed that older people who stopped driving were 1.4 times more likely to experience worsening depressive symptoms than those who continued to drive after the 6 years (Fonda et al. 2001). Longer-term restrictions on driving further increased the risk of depressive symptoms. Having a spouse who still drove did not significantly affect the respondents' depressive symptoms.

FIG. 1-6
**INSURANCE COVERAGE FOR PERSONS
 AGES 55-64, BY RACE/ETHNICITY: 2002**
(Percent with each type)



HEALTH CARE COVERAGE

The HRS can be used to assess health care coverage among pre-retirees and retirees and to examine the ways in which changes in health insurance policy can affect retirement decisions and labor market participation as a whole. Of particular interest are people ages 55 to 64, most of whom are not yet eligible for Medicare. **Figure 1-6** depicts racial/ethnic differences in types of health insurance coverage for this age group in 2002, indicating that Blacks and Hispanics are much less likely than Whites to have private health insurance, and hence are more likely to rely on public sources. About 1 in

TBL. 1-2
INSURANCE COVERAGE, BY MARITAL STATUS AND WORK STATUS: 2002

	Not Married		Married		
	Not Covered	Covered	Neither Covered	One Covered	Both Covered
Ages 55-64, Working for Pay					
White/Other	10.4%	89.7%	2.0%	3.9%	94.2%
Black	17.3	82.7	1.3	11.1	87.6
Hispanic	35.6	64.4	15.3	12.5	72.2
Ages 55-64, Not Working for Pay					
White/Other	12.7	87.3	2.8	6.5	90.8
Black	11.8	88.2	4.2	14.1	81.7
Hispanic	30.9	69.1	16.1	12.7	71.2
Age 65 and Over					
White/Other	0.5	99.5	0.1	1.4	98.5
Black	1.1	98.9	0.6	6.9	92.6
Hispanic	2.7	97.3	1.3	9.0	89.7

Note: Coverage refers to public and/or private insurance.

4 pre-Medicare-age Hispanic respondents has no health insurance, compared with roughly 1 in 8 Blacks and 1 in 14 Whites.

A further breakout of these data illustrates differences between married and unmarried individuals (**Table 1-2**). Regardless of age and work status, unmarried respondents are more likely than their married counterparts to be without insurance. Among married Black and Hispanic couples, a significant proportion of households have coverage for only one member of the couple.

In addition to comparing people with differing health insurance status, the HRS data have been

used to examine the implications of insurance status for health in later life. Baker et al. (2001) assessed the risks of a major decline in general health and the risks of developing new difficulties according to whether HRS respondents were continuously uninsured, intermittently uninsured, or continuously insured between 1992 and 1996. Continuously uninsured individuals were 63 percent more likely than privately insured people to experience a deterioration of overall health and 23 percent more likely to have new difficulties with an activity of daily living involving mobility. Sudano and Baker (2003) found that intermittent lack of insurance coverage, even across a relatively long period, was associated

with lower usage of preventive services. Looking at the same HRS data from a different perspective, Dor et al. (2003) found that providing insurance to previously uninsured working-age adults resulted in a 7 percent improvement in overall self-reported health.

Another study (McWilliams et al. 2003) analyzed differences in the receipt of basic clinical services among the continuously insured and the uninsured in 1996 and 2000—before and after respondents became eligible for Medicare at age 65. The analysis suggested that the acquisition of Medicare coverage significantly reduces the differences in the use of preventive services such as cholesterol testing, mammography, prostate examinations, and medical visits dealing with arthritis. Among adults with arthritis and/or hypertension, however, differences in the use of anti-arthritis/anti-hypertension medications between continuously insured and uninsured people were essentially unchanged after Medicare coverage began.

The HRS also can tell us who has prescription drug coverage and how they use it. The new Medicare Part D prescription drug coverage program was implemented in 2006, and the HRS will provide baseline estimates and then track changes in older adults' prescription drug coverage and use.

Other studies using HRS data also offer insights about prescription drug coverage. For instance, the survey showed that in 1998, HRS respondents under age 65 were more likely than those ages 65 to 79 and much more likely than those age 80 and older to have prescription-drug insurance coverage (80 percent, 71 percent, and 59 percent, respectively) (**Table 1-3**). Importantly, regardless of age, people who did not have prescription drug coverage were less likely to fill all of their prescriptions. Younger respondents

TBL. 1-3

PRESCRIPTION DRUG COVERAGE AND LIKELIHOOD OF FILLING PRESCRIPTIONS, BY AGE: 1998

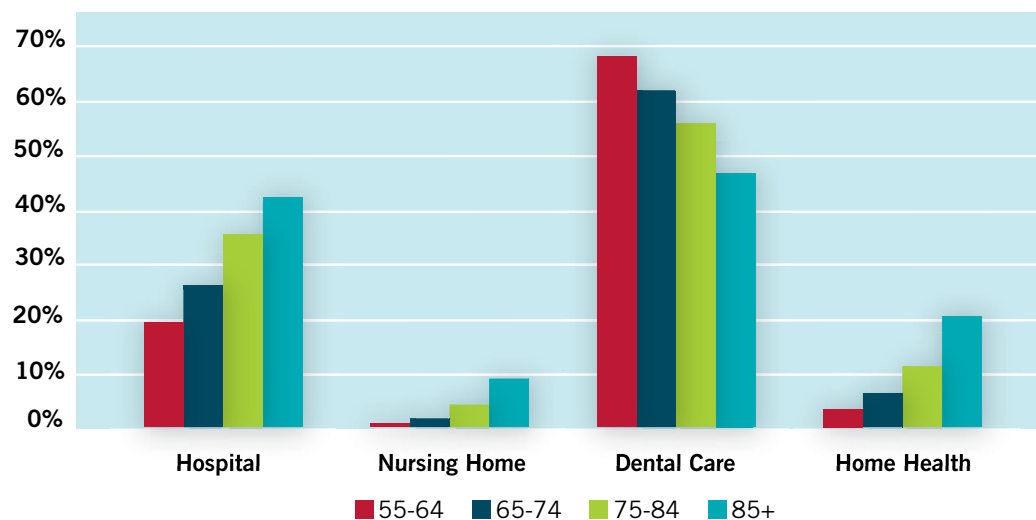
	Percent with Prescription Drug Coverage	Percent Not Filling All Prescriptions	
		With Insurance Coverage	Without Insurance Coverage
Under 65	80%	6%	22%
65-79	71	4	11
80 and Over	59	3	7

Source: HRS 1998.

FIG. 1-7

SERVICE USE IN THE PAST TWO YEARS, BY AGE: 2002

(Percent using each type of service)

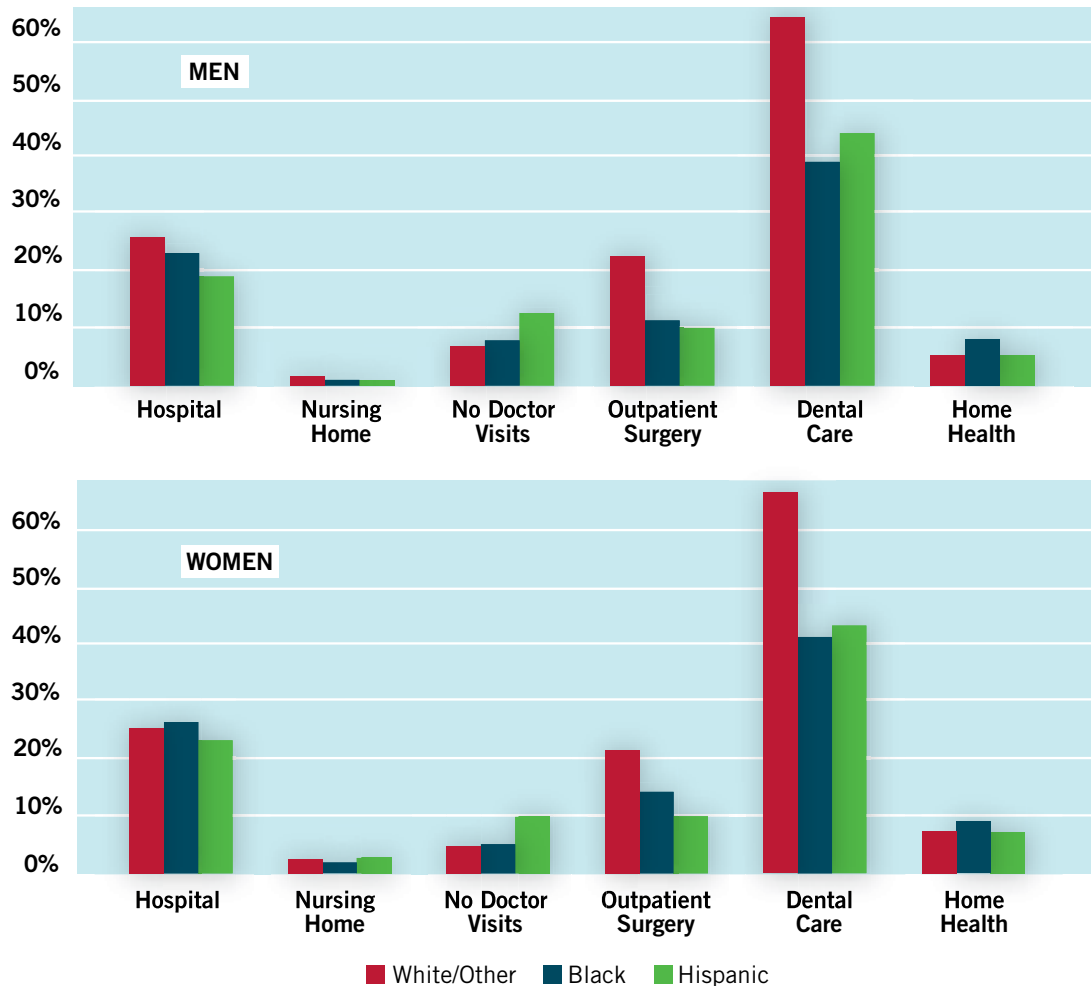


were less likely than older respondents to fill prescriptions, regardless of drug insurance coverage. One study suggested that this cost-cutting by seniors may pose an increased risk for adverse health outcomes (Heisler et al. 2004).

HEALTH CARE USE

As the U.S. population ages and Medicare expenditures continue to rise, the wealth of HRS data on use of health care services will become an increasingly important resource. **Figure 1-7**

FIG. 1-8

HEALTH SERVICE USE, BY RACE/ETHNICITY: 2002*(Percent using service between 2000 and 2002)*

illustrates HRS respondents' use of five major services during 2000 to 2002 and shows that more than 40 percent of people age 85 and older and 34 percent of those ages 75 to 84 made

hospital visits. The use of hospitals and nursing homes rose with age, as did the consumption of home health services. More than 10 percent of HRS respondents ages 75 to 84 and 20 percent

of respondents age 85 and older made some use of home health services during the 2-year period. In contrast, there was a marked decline in the use of dental care by age, probably driven at least in part by the fact that Medicare generally does not cover dental services.

Figure 1-8 contrasts health service use in 2002 for men and women of all ages, by race and ethnicity. Gender patterns did not differ greatly, although Black and Hispanic women were somewhat more likely than Hispanic men to make at least one hospital visit. Minority men and women were much less likely than Whites to visit a dentist or have outpatient surgery. Hispanic respondents were less likely than others to have visited a doctor at least once in a 2-year period; this difference corresponds to the lower level of health insurance coverage among Hispanics.

Health policy and cost-containment discussions are currently considering the efficacy of screening mammograms and Pap tests in older women. According to the HRS, usage rates for both of these tests increased for all age groups between 1995 and 2000. However, there are sharp differences in the rate of these tests taken with age. In 1992 through 2000, between 70 percent and 80 percent of women ages 50 to 64 reported receiving mammograms at least once every 2 years, with the proportion declining to about 40 percent among those ages 85 to 90. During the same time period, Pap test rates were about 75 percent for women ages 50 to 64 and about 25 percent for women ages 85 to 90, respectively.

Nonsmokers and women who perceived their health as good or excellent were the most likely to be screened, while smokers, sedentary individuals, and those who felt that their health was poor or fair were less likely to undergo screening.

USE OF ALTERNATIVE MEDICINES AND SUPPLEMENTS

Alternative medicine includes a broad range of healing philosophies, approaches, and therapies that conventional medicine does not commonly use or understand. These practices include, for example, the use of acupuncture, herbs, homeopathy, therapeutic massage, and traditional oriental medicine. Among HRS respondents to an experimental module in 2000, nearly half reported that they had been to a chiropractor, 20 percent had used massage therapy, and 7 percent had used acupuncture at least once in their lives (Ness et al. 2005).

In the same experimental module, more than half of respondents said they had used some kind of dietary or herbal supplement (**Table 1-4**). Nearly two-thirds of the respondents had used some kind of vitamin supplement in the month prior to the survey. On average, respondents spent \$173 a year on those supplements. The most popular supplement, multivitamins, was taken by half the sample. About one in five people reported using some kind of herbal supplement during the previous month, and spent an average of \$135 per year on herbals. Garlic, echinacea, ginkgo biloba, and ginseng were the most commonly used of these supplements.

AGING AND MEDICAL EXPENDITURES

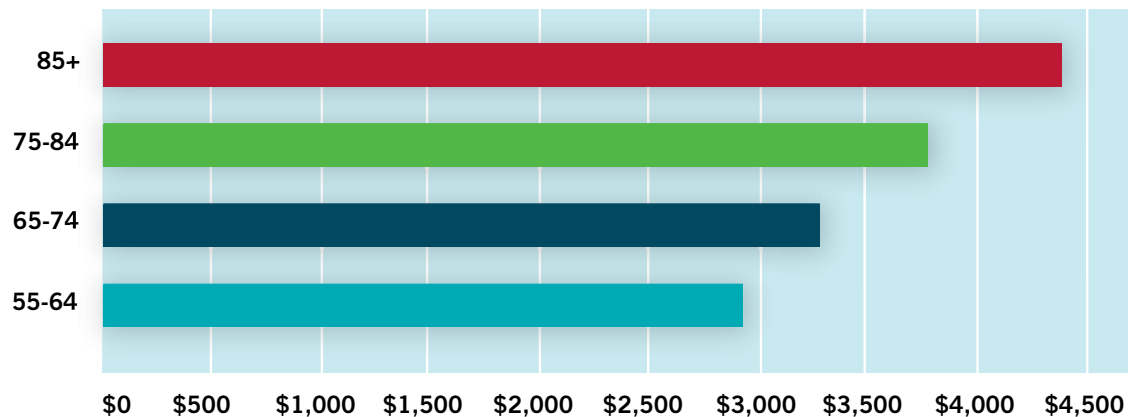
Health care expenditures can rise considerably with age, and the HRS provides detail on the amounts paid directly by respondents, sometimes called out-of-pocket expenditures. Data from 2002 show a steady increase with age in the dollar amount of out-of-pocket medical expenditures (**Figure 1-9**). Mean medical out-of-pocket expenditures during the 2-year period prior to the survey ranged from \$2,900 for respondents ages 55 to 64 to \$4,400 for people age 85 and older.

TBL. 1-4
SUPPLEMENT USE: 2000
(Percent using each item in the month prior to the 2000 survey)

Dietary Supplements		Herbal Supplements	
Multivitamin	50%	Garlic	8%
Vitamin E	38	Echinacea	8
Calcium	34	Gingko Biloba	7
Vitamin C	32	Ginseng	6
Vitamin D	14	Saw Palmetto	4
Magnesium	12	Aloe	4
Vitamin A	10	St. John's Wort	4
Others	24	Others	14

Source: HRS 2000.

FIG. 1-9
AVERAGE OUT-OF-POCKET MEDICAL EXPENDITURE, BY AGE: 2000-2002
(For the 2-year period prior to the 2002 survey)

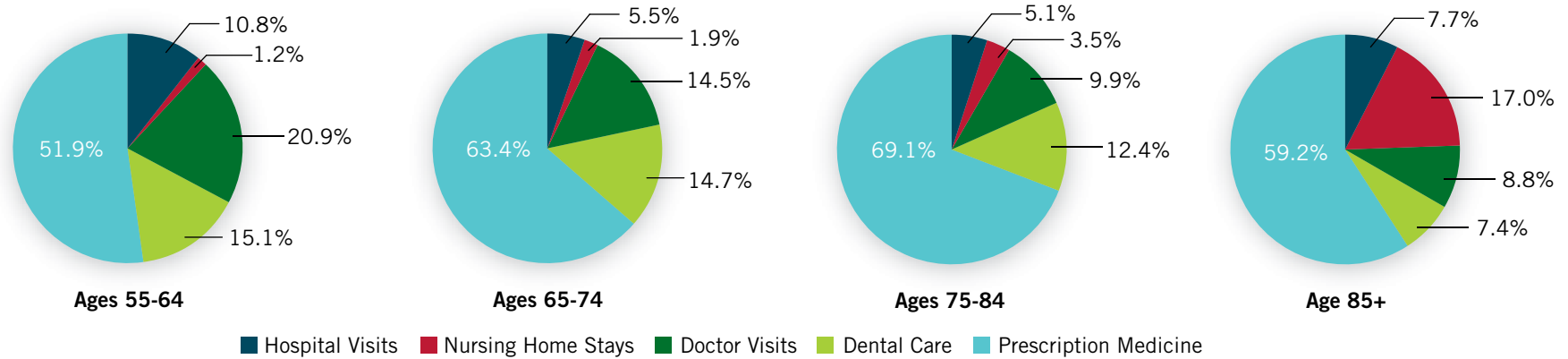


The major components of medical out-of-pocket spending vary by age as well. Data from the 2002 survey wave show that hospital and doctor

visits were the largest component of out-of-pocket expenditures among younger respondents (ages 55 to 64), some of whom were not covered

FIG. 1-10

COMPONENTS OF MEDICAL OUT-OF-POCKET SPENDING, BY AGE: 2000-2002



Note: Data may not sum to 100% due to rounding.

by health insurance, whereas most people over age 64 have Medicare coverage for hospital and physician visit costs. At the time of the survey, prescription drugs were not covered by Medicare, and an age-related rise in the proportion of medical out-of-pocket expenditures devoted to drugs was seen, at least until age 85 (**Figure 1-10**).

Medical spending by the elderly varies widely. One study using HRS data from 1998 found that in the 2 years prior to 1998, average out-of-pocket spending was about \$2,022, but half the population spent less than \$920, while 10 percent of the population spent more than \$4,800 (Goldman and Zissimopoulos 2003).

Medical out-of-pocket expenditures tend to be greatest near death, and can be a financial challenge for a surviving spouse. A four-wave analysis of HRS data for non-institutionalized people who were age 70 and older in 1993 showed that medical out-of-pocket spending averaged approximately \$6,000 in the last year of life—40 percent to 50 percent higher than at other

points in old age (McGarry and Schoeni 2003). To put this into perspective, researchers compared out-of-pocket spending to annual income. The average couple's medical out-of-pocket expenditures were roughly 15 percent of annual income 5 to 7 years before the death of a spouse. The out-of-pocket expenditure share rose to about 25 percent 3 years before the death of a spouse and to 50 percent in the year before the spouse's death.

When calculation of poverty rates includes an adjustment for the high end-of-life medical out-of-pocket expenses, the rates rise steeply as a function of spousal death. This type of analysis helps demonstrate the potential effects of proposals to revise current health programs. For example, HRS data suggest that expanding Medicare coverage to include prescription drugs and long-term care (nursing home and hospital) would significantly lower medical out-of-pocket spending. Prescription drug coverage would lower out-of-pocket-adjusted poverty by between 21 percent and 33 percent for people who were many years removed from death,

and between 10 percent and 18 percent for those in their final year of life. Nursing home and extended-hospital coverage would likely have little effect on poverty rates for those not near death, but could lower the medical out-of-pocket adjusted poverty rate by 17 percent for those in the last year of life.

EFFECTS OF UNEXPECTED HEALTH EVENTS

Early HRS data indicated that over a 2-year period, respondents on the whole had a 5 percent chance of having a heart attack, stroke, or new cancer diagnosis; a 10 percent chance of having a new chronic illness diagnosis; and a 3 percent chance of having an accidental injury. A "health shock," or unexpected health event, may represent a turning point for an individual and her/his family, particularly if the individual is nearing retirement age.

To explore the implications of adverse health events on both short-term and longer-term labor force participation, one study followed the labor force behavior of HRS respondents through the

first three interviews in 1992, 1994, and 1996 (McClellan 1998). Persons who had some form of health event (acute, chronic, or decline in functional ability) between 1992 and 1994 were about twice as likely to be out of the labor force in 1994 and 1996 compared with persons who did not experience a significant health event. The combination of an acute health event (such as a heart attack or stroke) and a decline in functional ability greatly elevated the likelihood of labor force withdrawal. Having both an acute event and a loss of functional ability between 1992 and 1994 reduced the chances of working in 1994 by 400 percent. Only a very small fraction of those who had both an acute event and a loss of functional ability between 1992 and 1994 had reentered the labor force by 1996 (see also Woodbury 1999).

In a separate study of HRS data from 1992 through 2000, Coile (2003a) examined the effect of the onset of a heart attack or stroke, accompanied by new difficulty in performing four activities of daily living, on remaining in the labor force. The analysis showed that men were 40 percent more likely and women 31 percent more likely to leave the labor force than they would have been without a health event.

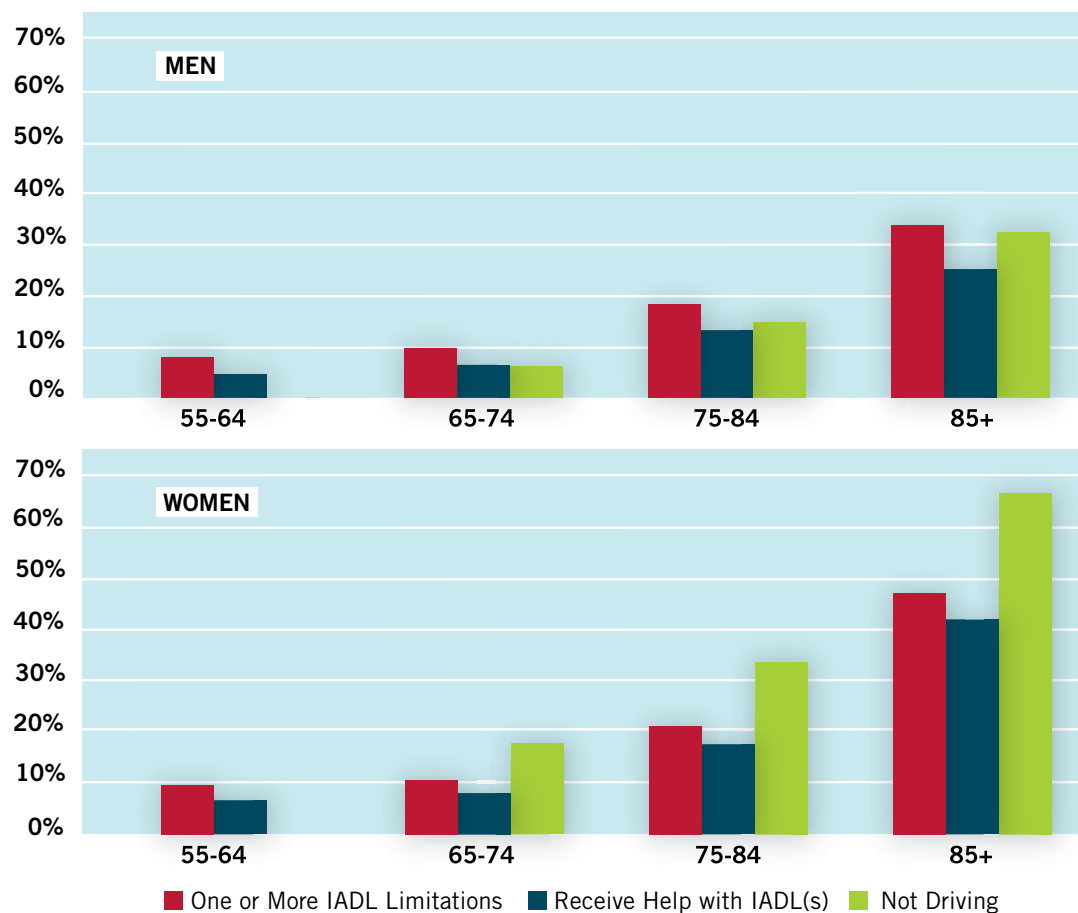
An important dimension of household behavior following a health event is the response of the spouse, and previous research has been unable to account for this behavior. The HRS's collection of detailed data for both husbands and wives permits study of this area, such as the response involving the spouse's decision to work. Because a negative health event may diminish the family's income position, a spouse's decision to reduce employment could exacerbate the situation. However, analysis of data from 1992 through 2000 indicates that a major health event does not produce a major change in spouses' labor force participation. If a working person experiences a major health event, his or her spouse is not likely

to begin or increase labor force participation to offset the income loss. This suggests that a health event causes real financial losses for the family, although these losses are offset to some extent by government disability insurance benefits. It also suggests that many people are underinsured against disability.

DISABILITY AND PHYSICAL FUNCTIONING

Ongoing interests in aging research include the trend in disability status among older individuals and people's transitions into and out of disability states. A number of studies in the United States

FIG. 1-11
LIMITATION IN INSTRUMENTAL ACTIVITIES OF DAILY LIVING, BY AGE: 2002



Note: Percent not driving at ages 55-64 is zero.

have now documented a decline in disability rates among the population age 65 and older. Much research has focused on this age group, but relatively little research has focused on people in the late midlife, pre-retirement age group. It is interesting not only to observe the disability status and transitions among pre-retirement individuals, but also to investigate predisposing factors and behaviors that might influence the disability profile of tomorrow's elders.

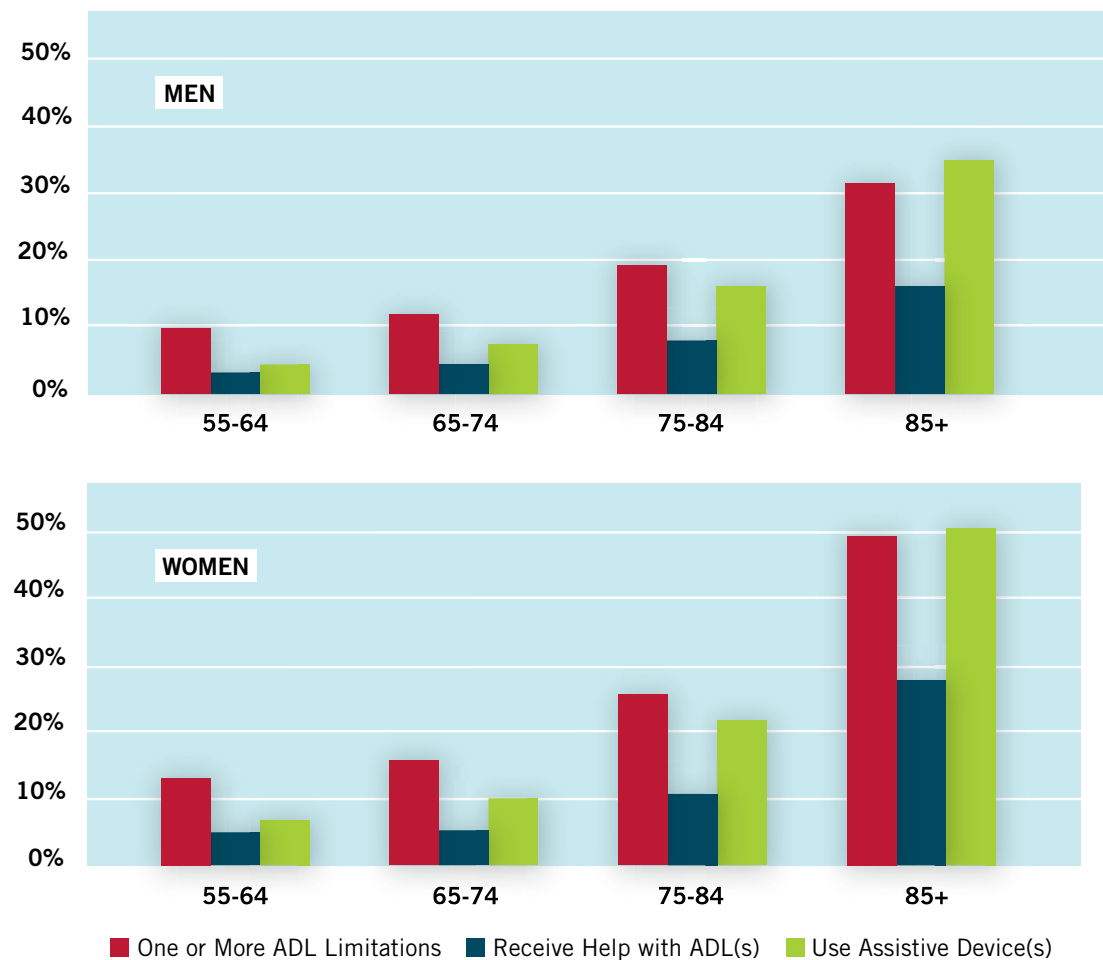
Figures 1-11 and **1-12** present the percentages of male and female 2002 HRS participants with functional limitations or disabilities. Six indicators of functional disability are considered. The first and second indicators reflect instrumental activities of daily living (IADLs)—doing housework, doing laundry, preparing meals, grocery shopping and being mobile outside the home, managing money, and using a telephone—and the third indicator of functional disability is whether or not a person has stopped driving. The fourth and fifth indicators reflect limitation in conventionally defined activities of daily living (ADLs)—eating, dressing, bathing, toileting, getting in and out of bed, and being mobile in one's residence. The sixth indicator of functional disability is the use of an assistive device, such as a walker or cane.

Figure 1-11 depicts age and gender differences for IADL limitations, showing that limitations increased with age and were higher for women than men in 2002. The percentages of respondents with IADL limitations initially are lower than for ADL limitations, but increase more rapidly with age, such that by age 85 they are nearly the same. Although the age-specific IADL limitation percentages are lower than those for ADLs, HRS participants were more likely to receive help with IADLs than with ADLs.

The most dramatic gender difference in functional limitations was seen in the data for driving. At age

FIG. 1-12

LIMITATION IN ACTIVITIES OF DAILY LIVING, BY AGE: 2002

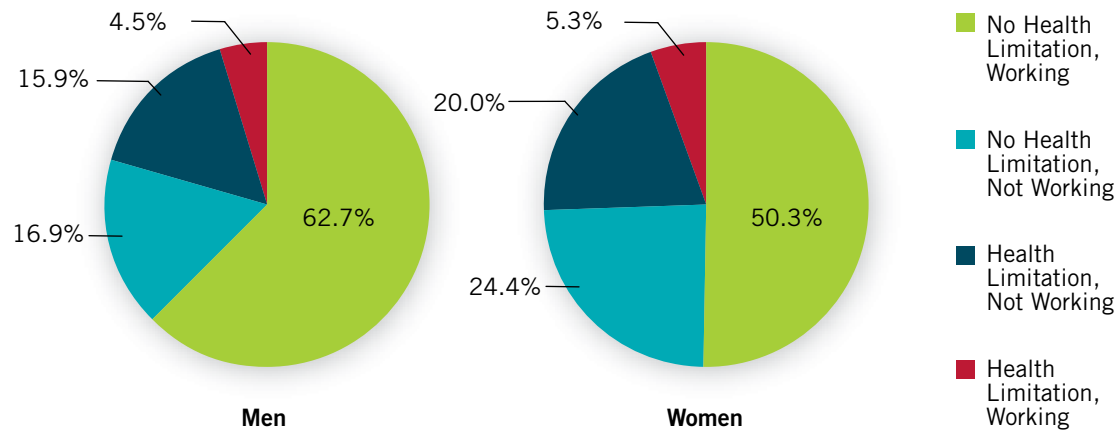


65 and older, men were twice as likely as women to still be driving. By age 85, 32 percent and 66 percent of non-institutionalized men and women, respectively, were no longer driving. In the sample as a whole, three-fourths of people ages 75 to 84

continued to drive, as did 45 percent of people age 85 and older.

The HRS data further show that for men ages 55 to 64, 13.2 percent report either an ADL or

FIG. 1-13
HEALTH LIMITATIONS AND WORK STATUS, AGES 55-64: 2002



IADL limitation; of them, 4.2 percent work while 9 percent do not work. For women, 15.6 percent report a functional limitation; of them, 3.8 percent work while 11.8 percent do not work.

Figure 1-12 presents percentages of HRS respondents who reported in 2002 that they had one or more ADL limitations, received help with these activities, or used assistive devices. As with IADL limitations, for both men and women, the rates of having at least one ADL limitation, receiving help with ADLs, and using an assistive device rose with age. Without exception, the percentages were higher for women than for men.

HEALTH AND WORK

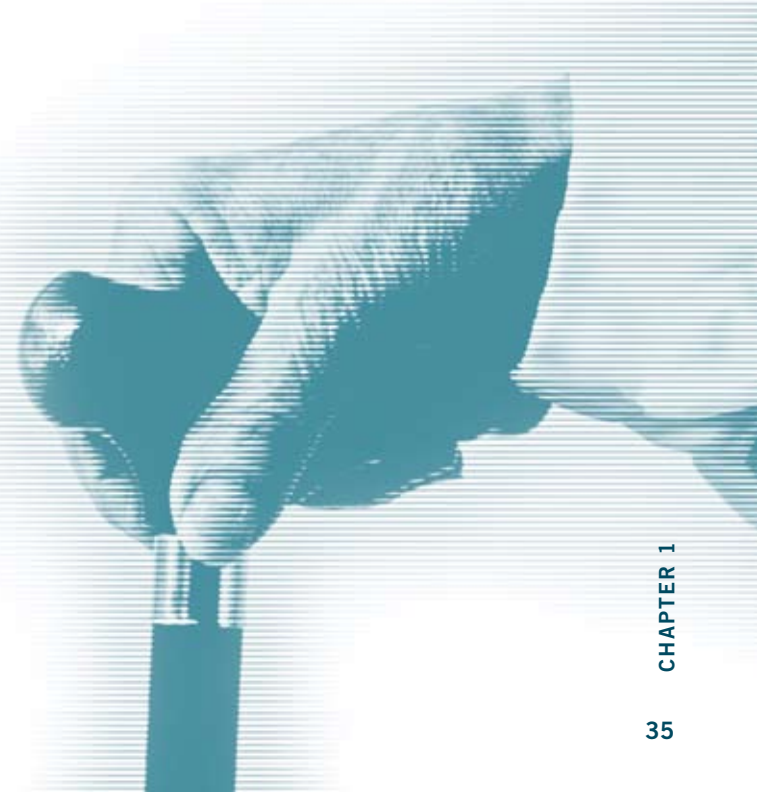
As average life expectancy lengthens and our population ages, there is heightened debate about raising retirement ages and enabling individuals to work longer. To help inform this

debate, it is useful to know the extent to which older individuals experience health conditions that may affect their work activity. **Figure 1-13** presents 2002 data for people ages 55 to 64, according to work status and health limitations. Twenty percent of men and 25 percent of women in this age group reported a health problem that limited their ability to work. Included in this group, about 5 percent of each sex worked despite a work-limiting health problem. Of those ages 55 to 64 who had work-limiting health problems, 48 percent of the men and 52 percent of the women reported at least one ADL or IADL limitation, while the others reported no such limitations.

HRS data from 1992 to 1996 revealed that more than one-half of men and one-third of women who leave the labor force before reaching the Social Security early retirement age of 62 reported that health limited their capacity to

work. One study looked at three causes of workforce disability—cigarette smoking, a sedentary lifestyle, and obesity—between 1992 and 1998 (Richardson et al. 2003). Cigarette smoking and a sedentary lifestyle had a large impact on both the incidence of workforce disability and death.

The major health problems reported by HRS respondents age 55 and older who were working for pay in 2002 were arthritis and hypertension. Forty-seven percent of all workers reported having arthritis, and 44 percent reported having a hypertensive condition. Ten percent or more of the working respondents reported having heart conditions, diabetes, psychological problems, or cancer (**Figure 1-16**, page 38). By far, the largest reported causes of work limitation among people ages 55 to 64 who were not working were





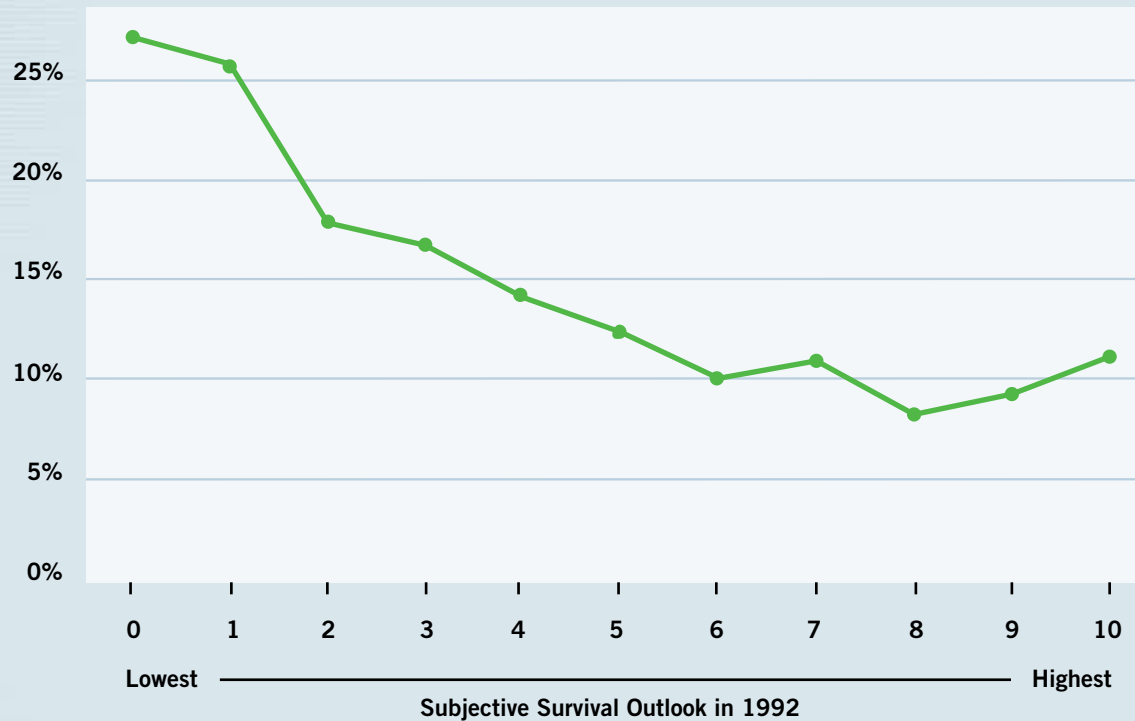
HOW LONG DO PEOPLE THINK THEY'LL LIVE?

From its first wave to the present, the HRS has asked respondents about their own assessments of their chances of survival to a “target” age (i.e., their subjective survival probability). The target age used in the survey varies with the age of the respondent. For example, respondents age 64 or less

are asked about survival to age 75, while respondents ages 65 to 69 are asked about survival to age 80. The research objective of this question is to better understand inter-temporal decision making. A good example is saving behavior. According to the leading economic model of saving, people who

FIG. 1-14
PERCENT DYING BETWEEN 1992 AND 2002 AMONG THE ORIGINAL HRS
COHORT, BY SUBJECTIVE SURVIVAL OUTLOOK IN 1992

(Respondents ages 51-61 in 1992)



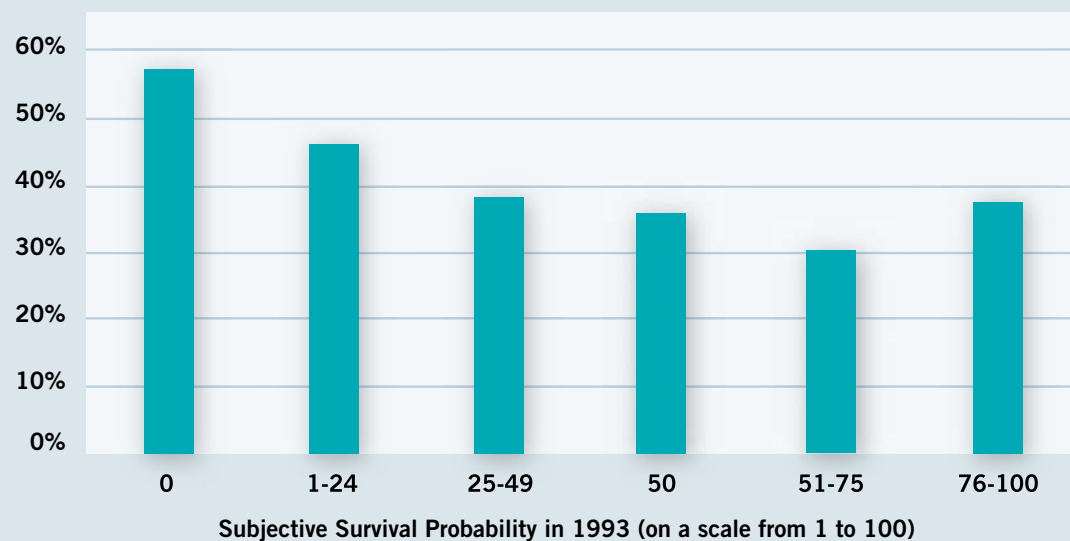
believe they will be especially long lived will save more to be able to finance more years of spending. In the past, researchers had to use life-table survival rates to estimate the subjective survival probabilities of individuals, but we know from actual mortality that survival rates of people grouped by observable characteristics such as education differ greatly. It is likely, therefore, that individuals have differing self-rated survival assessments, even within identifiable groups.

As with many innovations in the HRS, the actual use of survival assessments has expanded beyond what was initially foreseen. For example, they have been used to study the socioeconomic health gradient (How does subjective survival vary with income and wealth?), the “bereavement effect” (How does subjective survival change when a spouse dies?), and the effect of a health event (How does the onset of a cancer change subjective survival?).

Using the longitudinal data from the HRS, self-rated survival assessments can be related to actual mortality many years later. In 1992, an 11-point scale (from 0 to 10) was used to query HRS respondents about their outlook for survival. *Figure 1-14* shows the percent of the original HRS sample who had died by 2002, as a function of their subjective survival outlook as of 1992. Mortality during the 10-year period was about 10 percent among those who stated that their subjective survival was 60 percent or greater, but more than 25 percent among those who reported very low subjective survival probabilities.

FIG. 1-15
PERCENT OF RESPONDENTS AGE 70 AND OLDER DYING BETWEEN 1993 AND 2002, BY SUBJECTIVE SURVIVAL OUTLOOK IN 1993

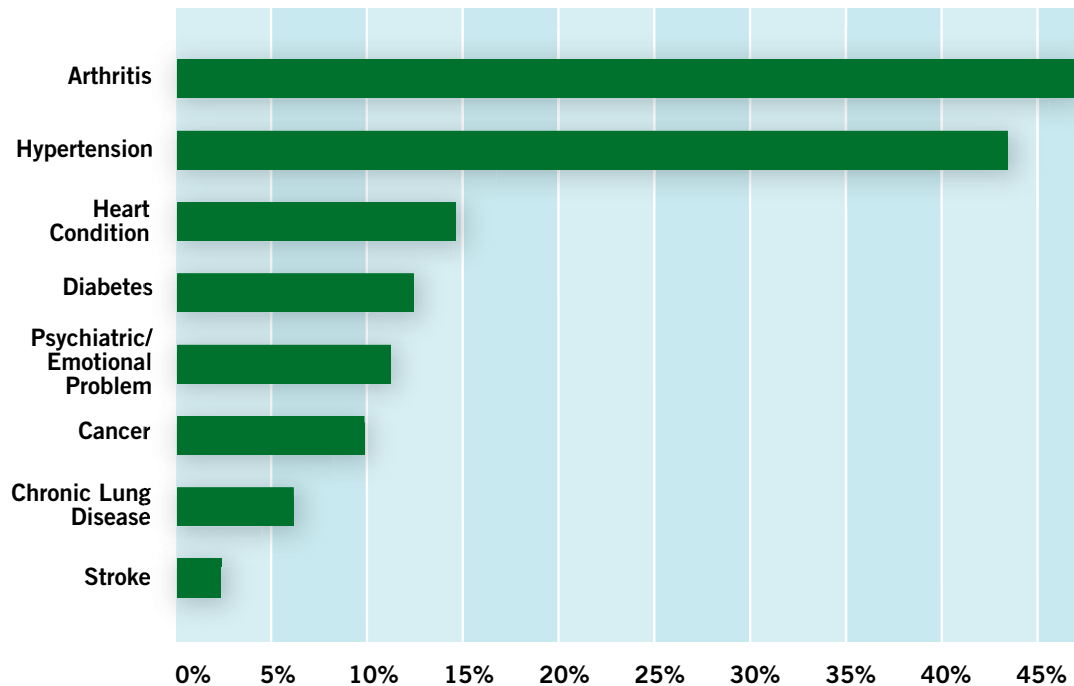
(Respondents age 70 and older in 1993)



In 1993, a 101-point scale (from 0 to 100) was used for interviews of respondents age 70 or over in 1993. This scale change was made so the concept would fit more naturally with probabilistic information people normally hear in their everyday lives, such as “There is a 60 percent chance it will rain tomorrow.” *Figure 1-15* shows mortality by 2002 among those initially age 70 or over in 1993. Actual mortality among those with an initial subjective survival of zero was almost 60 percent—about twice the rate of those whose subjective survival was 51 to 75. As with the younger cohort of *Figure 1-14*, self-rated survival assessments are a powerful predictor of actual mortality.

FIG. 1-16

HEALTH CONDITIONS AMONG WORKERS AGE 55 AND OVER: 2002



arthritis and other musculoskeletal conditions (47 percent), followed by cardiovascular conditions (16 percent), neurological problems (8 percent), and allergies and respiratory problems (7 percent).

As the HRS proceeds, it is likely that more sensitive analyses will be conducted on people's ability to continue working should they either need to or want to work longer.

HRS data show that job loss not only results in economic consequences, but also can impact a person's health. Involuntary job loss was

perceived to negatively affect both physical functioning and mental health. Likewise, becoming re-employed was found to be positively associated with improved physical functioning and mental health. Such results led researchers to argue for a causal relationship between job loss and morbidity among older workers, and to suggest that there is a significant health consequence to job loss in addition to the obvious economic consequences (Gallo et al. 2000). The links among health, work, and retirement offer a rich area of investigation, and are discussed more thoroughly in Chapter 2.

HEALTH STATUS OF U.S. VERSUS ENGLISH OLDER ADULTS

The HRS has helped spawn the development of similar multidisciplinary, longitudinal studies of health and retirement in other countries. A comparison of HRS data with data from one of these studies, the English Longitudinal Study of Ageing (ELSA), has revealed important health-status differences—and important similarities—between White middle-aged Americans and their English counterparts (Banks et al. 2006). The research used the study participants' self-reports of health and biological measures to measure health status.

The study revealed that White Americans ages 55 to 64 are not as healthy as their English counterparts, and in both countries lower income and education levels were associated with poorer health. The healthiest Americans in the study—those in the highest income and education levels—had rates of diabetes and heart disease similar to the least healthy in England—those in the lowest income and education levels.

In addition, the lowest income and education group in each country reported the most cases of diabetes, hypertension, heart disease, heart attacks, stroke, and chronic lung disease, while the highest income and education groups reported the least. The only disease for which this inverse relationship was not true was cancer. Banks and colleagues also found that differences between the two countries in smoking, obesity, and alcohol use explained little of the difference. In a report published in the *Journal of the American Medical Association* (Banks et al. 2006), the researchers noted that the health-status differences they uncovered existed despite greater U.S. health care expenditures, similar patterns in life expectancy between the two countries, and the fact that smoking behavior in the two countries is similar.

WORK & RETIREMENT



CHAPTER 2: WORK & RETIREMENT

Attitudes, expectations, and behaviors related to work and retirement have changed considerably over the past half century. In 1950, the average man retiring at age 65 could expect to live another 13 years, and a 65-year-old woman another 15 years. Today, men average an additional 17 years and women another 20 years beyond what we think of as the typical retirement age. With such improvements in health and longevity, people might have been expected to work longer and retire later. Instead, the opposite trend unfolded.

Between the 1950s and the mid-1980s, participation of older men in the labor force declined at a notable rate as more and more men opted for retirement before the standard age of 65. This decline leveled off after the mid-1980s and, since 1990, labor force participation rates for older men have increased slightly. The story for older women reflects two complementary trends. Proportionally more women of all ages are working in the formal labor market, and labor force participation rates for women over age 60 (especially those in the 60 to 64 age range) have also risen significantly during the past 20 years.

The Health and Retirement Study delves deeply into the work and retirement of older Americans. This chapter discusses HRS findings about labor force participation and the nature of work among older adults, factors that contribute to people's decisions to retire, the consumption of goods and services with age, and attitudes about retirement. It also looks at retirement incentives in pension programs and the knowledge that people have about their retirement plans.

CHAPTER HIGHLIGHTS

HRS data show that people are ready to retire in their early to mid-60s, but retirement trends are changing, with older adults increasingly interested in part-time opportunities and other activities to stay busy and productive with age:

- **Although retirement rates rise steeply at the Social Security eligibility ages of 62 and 65, many older people do remain in the workforce, either full-time or part-time.** In their 50s, most men (70 percent) and a majority of women (60 percent) work. By age 65, employment rates among men and women are half of what they were for workers a decade younger.
- **Most people are happy and active in retirement.** Some 61 percent of retirees surveyed in 2000 say they found the retirement transition to be “very satisfying.” One-third of retirees reported moderate satisfaction, and only 7 percent reported that their retirement was not satisfying.
- **Baby boomers are expecting to work longer, perhaps presaging a reversal in the century-long trend toward earlier retirement.** Compared with 1992, in 2004, a substantially larger proportion of people in their early to mid-50s expected to work after 65.
- **The structure and availability of pensions strongly influence the decision about when to retire.** The expansion of defined-contribution plans and decline of defined-benefit plans over the past 20 years may be playing a role in ending the trend toward earlier retirement. A study using HRS data finds that people with defined-benefit plans (usually including retirement incentives, lifelong benefits, and reduced pension investment risk) retire on average 1.3 years earlier than those with defined-contribution plans such as 401(k)s.
- **Health problems can have a big influence on the decision to retire early.** One analysis of HRS data suggests that poor health is a stronger influence than financial variables on people's decisions to retire. Poor health is cited as being very important in the decision to retire for 35 percent of people ages 55 to 59, but considerably less so among those 60 and older.
- **Married couples tend to make retirement decisions jointly, even when that means one will continue to work.** One study using four waves of HRS data found that people are less likely

to retire if their spouses are still working than if their spouses have already retired. However, if one spouse retires for health reasons, the other spouse is less likely to retire than if the spouse has voluntarily retired.

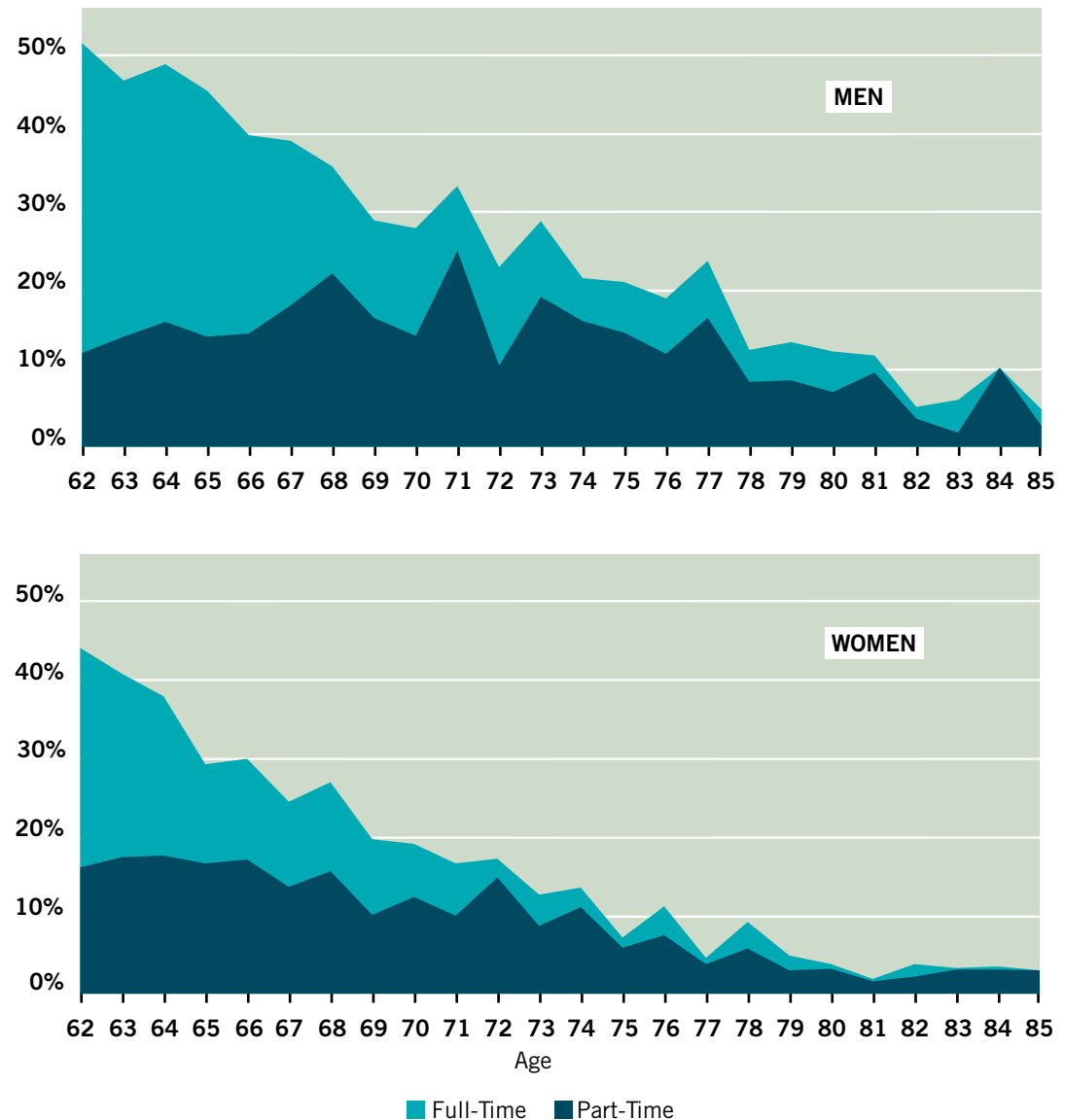
LABOR FORCE PARTICIPATION

The majority of both men (70 percent) and women (60 percent) in their 50s work, mostly on a full-time basis. After age 62—the age of initial eligibility for Social Security benefits—labor force activity declines (*Figure 2-1*). By age 65, male and female labor force participation is close to half of what it was for people in their 50s. The nature of work changes with age as well. By age 65, more than half of working women are employed in part-time as opposed to full-time positions. For both genders, part-time employment forms the lion’s share of total employment for people age 70 and older.

In 2002, married HRS participants were significantly more likely to be working than were their non-married counterparts. Conversely, unmarried individuals were more likely to be retired, although the difference between married and unmarried men is fairly small (56.9 percent and 53.2 percent, respectively) (*Table 2-1*). Married people were less likely than unmarried people to report themselves as disabled, which may partially account for the continued participation of married people in the workforce at most ages.

Figure 2-1 depicts work status in a single year, 2002. While the overall trend is indicative of the HRS population, the declining sample size of workers as age increases produces the peaks and valleys seen at certain ages. Another way to portray the work/retirement experience is to follow a single cohort of HRS participants over time (Gustman and Steinmeier 2004b). *Figure 2-2* depicts the retirement pattern of a subset

FIG. 2-1
FULL-TIME AND PART-TIME WORK, AGES 62-85: 2002



of the initial HRS cohort (people ages 51 to 61 in 1992) over 10 years, focusing on “career workers.” To be classified as a career worker, a person must have worked full-time in at least half the years between age 40 and his or her last year of full-time work, and worked full-time in some year at or after turning age 50. The bottom segment of **Figure 2-2** (“completely retired”) indicates the direct flow into full retirement; this includes moving from full-time work directly into retirement, as well as moving from partial retirement into full retirement. The upper segment includes those who, during the course of the study, moved from full-time work into partial retirement and then into full-time retirement. One can see steep rises in retirement at ages 62 and 65 as individuals become eligible for early and full Social Security benefits.

Gustman and Steinmeier (2004b) also found differences in retirement ages by gender and racial/ethnic group. **Figure 2-3** looks at differences between White career workers versus Black and Hispanic career workers in terms of retirement from full-time work, again using the trend data from the initial HRS cohort (people ages 51 to 61 in 1992). Except at a couple of ages, Black men are more likely than White men to be retired, with the largest difference being 7.6 percentage points at age 57. After age 59, Hispanic men, especially those in their mid-60s, are less likely than Whites to be retired. For women, there are relatively small differences in retirement levels between Blacks and Whites. Hispanic women age 55 and younger are somewhat less likely than White women to be retired from full-time work, while Hispanic women are generally more likely than White women to be retired after age 55.

TBL. 2-1

LABOR FORCE STATUS OF NOT-MARRIED AND MARRIED HRS RESPONDENTS: 2002

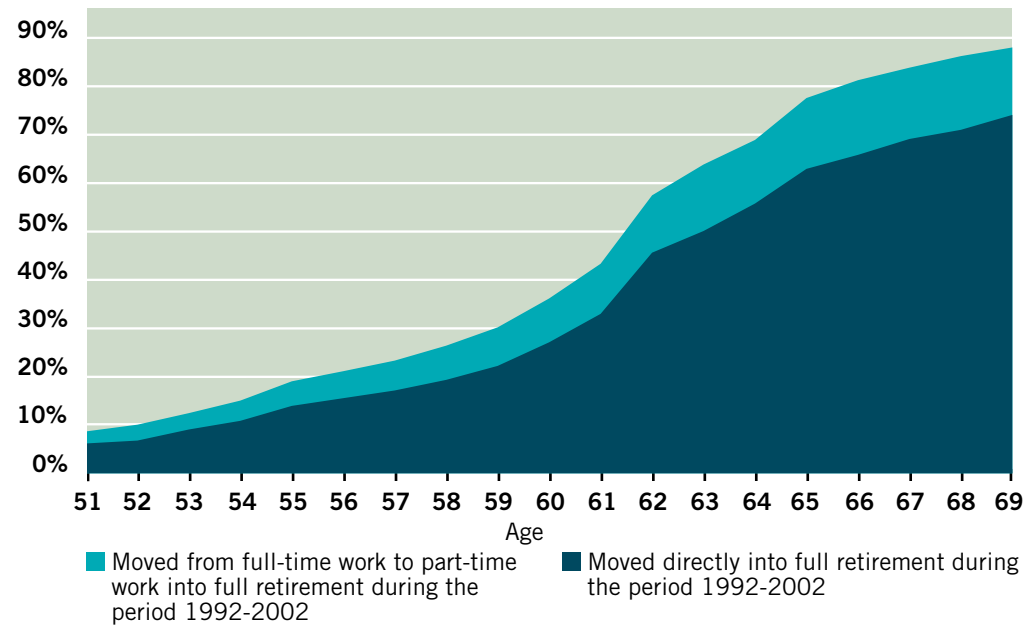
	Not Married		Married	
	Men	Women	Men	Women
Working	31.5%	24.8%	43.2%	32.2%
Retired	56.9	47.1	53.2	35.1
Disabled	12.0	9.7	7.0	5.2
Unemployed	3.5	1.8	1.8	1.6
Homemaker	0.2	22.4	0.3	32.7

Note: Columns do not add to 100 percent because more than one status is possible. For example, a respondent could be working and a homemaker.

FIG. 2-2

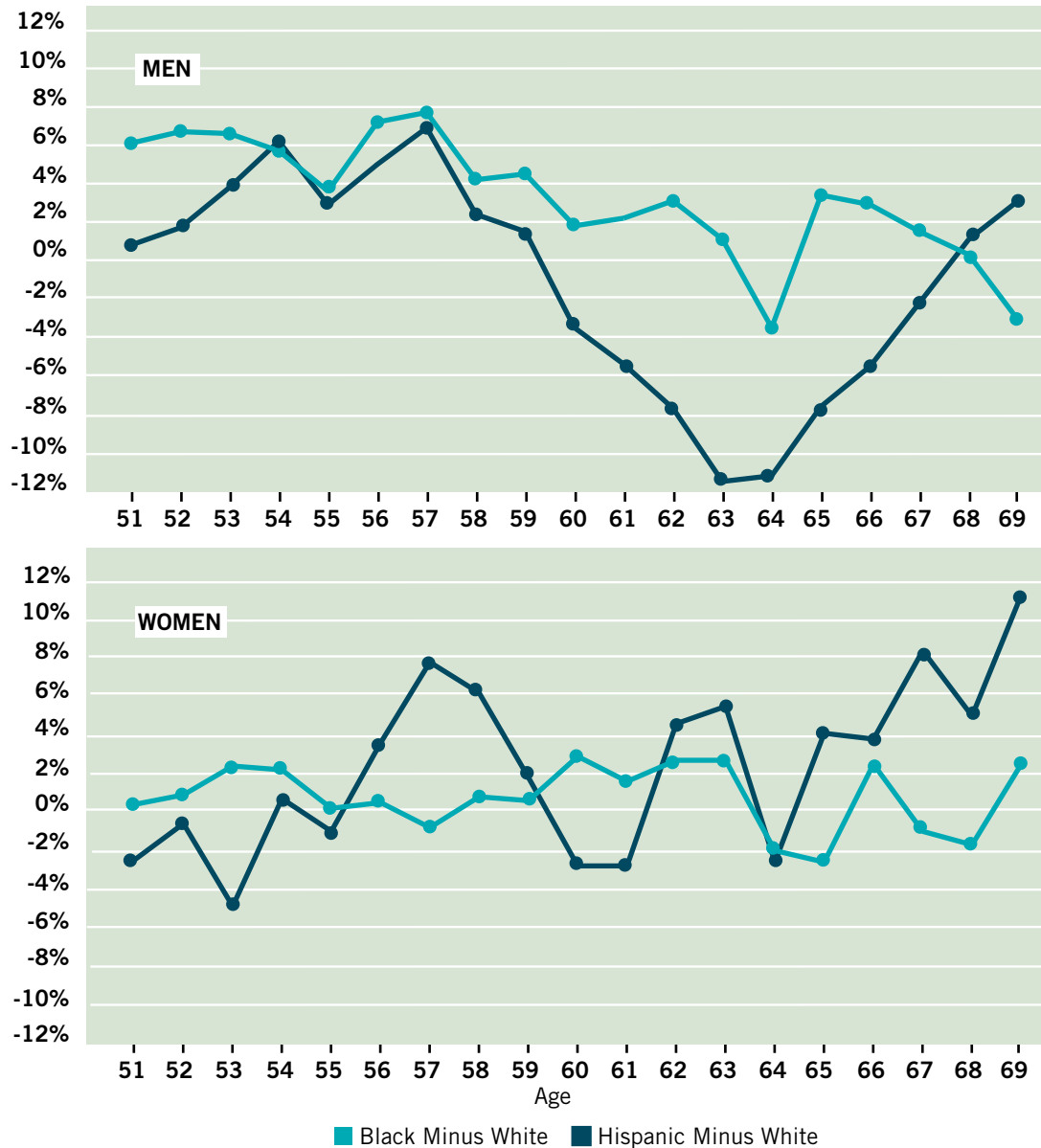
RETIREMENT PATTERN FOR CAREER WORKERS IN THE FIRST HRS COHORT: 1992-2002

(People ages 51-61 in 1992)



Source: Gustman and Steinmeier 2004b.

FIG. 2-3
**ABSOLUTE DIFFERENCE IN PERCENT OF CAREER WORKERS WHO ARE RETIRED,
 BY AGE AND RACE/ETHNICITY: 1992-2002** (People ages 51-61 in 1992)



THE CHANGING NATURE OF WORK

The American workplace has changed substantially over the past 15 years. Studies have shown that work relies increasingly on computer and people skills in a growing service economy, and that fewer and fewer jobs require considerable physical strength. HRS data reflect this decline: in 1998, 34 percent of 51- to 56-year-olds reported that their jobs required lots of physical effort, down from 39 percent among the same age group in 1992. However, in 2002, some 30 percent of workers ages 55 to 79 still reported doing “lots of physical effort” and 14 percent said their jobs required lifting heavy loads (*Table 2-2*).

Older employed workers felt that good eyesight and people skills were key requirements for performing their jobs, but they differed dramatically by age in viewing computer skills as a requirement for work. Fifty-three percent of workers ages 55 to 59, but only 17 percent of workers age 75 and older, reported that their jobs required computer use all or most of the time.

Note: A positive difference indicates that Black or Hispanic respondents are more likely than White respondents to be fully retired at a given age. A negative difference indicates that Black or Hispanic respondents are less likely than White respondents to be fully retired.

Source: Gustman and Steinmeier 2004b.

TBL. 2-2

JOB REQUIREMENTS OF EMPLOYED RESPONDENTS, BY AGE: 2002*(Percent reporting that “My job requires X all of the time or most of the time”)*

Age Category	Lots of Physical Effort	Lifting Heavy Loads	Stooping, Kneeling, or Crouching	Good Eyesight	Intense Concentration	People Skills	Computer Use
55–59	30%	14%	27%	89%	81%	88%	53%
60–64	33	13	24	87	81	87	45
65–69	29	11	21	90	80	87	29
70–74	27	8	17	87	76	81	23
75–79	28	10	17	87	80	79	17
80+	23	10	11	90	81	81	17

TBL. 2-3

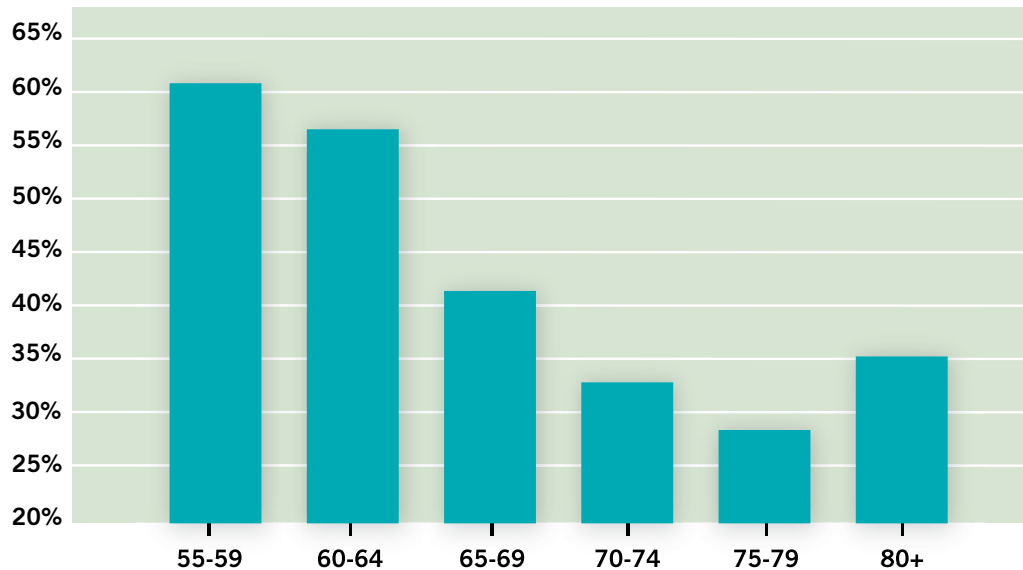
JOB CHARACTERISTICS OF EMPLOYED RESPONDENTS, BY AGE: 2002*(Percent reporting that they “Strongly agree or agree that...”)*

Age Category	My Job Requires More Difficult Things Than It Used To	My Job Involves a Lot of Stress	Preference is Given Towards Young Workers at My Job	My Job Pressures Retirement Before Age 65	I Would Prefer to Gradually Reduce My Hours, Keeping Pay the Same	My Job Lets Older Workers Move to Less Physically Demanding Work	I Really Enjoy Going to Work
55–59	50%	61%	16%	13%	60%	37%	88%
60–64	44	57	16	13	61	38	90
65–69	32	41	12	7	56	39	95
70–74	28	33	8	6	51	29	96
75–79	23	28	3	8	43	34	98
80+	29	35	5	6	46	32	96

FIG. 2-4

STRESS ON THE JOB, BY AGE: 2002

(Percent saying that their job involves “a lot of stress”)



One study examining the impact of technological change on older workers found that HRS computer users were 25 percent more likely than non-users to stay in the labor force from 1992 to 1996 (Friedberg 2003). Further analysis suggested that these computer users have valuable skills that lead them to delay retirement.

The HRS also asks participants to characterize their work in terms of job difficulty, stress, preferences for hours, enjoyment, and other factors. In 2002, about half of workers in their late 50s said their jobs required “more difficult things” than in the past, while only 29 percent of people in their 80s felt that way (Table 2-3). Similarly, 61 percent of workers ages 55 to 59, compared to only 28 percent of workers ages 75 to 79 said

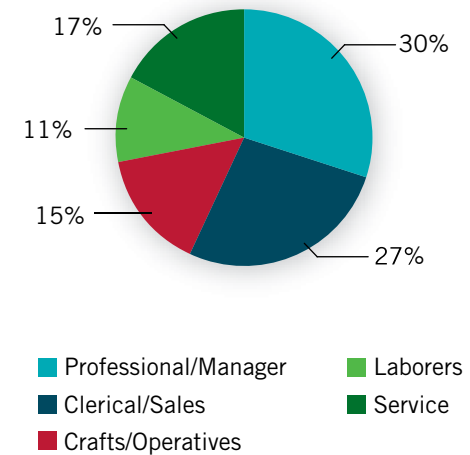
their jobs involved “a lot of stress” (Figure 2-4). With lower degrees of perceived job difficulty and stress, despite relatively lower wages, workers over age 70 were more likely than younger workers to say that they “really enjoy going to work.” However, even among pre-retirement age workers (ages 55 to 59) with the highest self-reported job stress and job difficulty, 88 percent said they enjoy their jobs.

OCCUPATIONS AFTER AGE 70

In 2002, 30 percent of individuals who remained economically active after age 70 held professional and managerial jobs, presumably using the skills and knowledge developed during their careers. The share of workers in clerical and sales positions

FIG. 2-5

OCCUPATION OF WORKERS AGE 70 AND OLDER: 2002

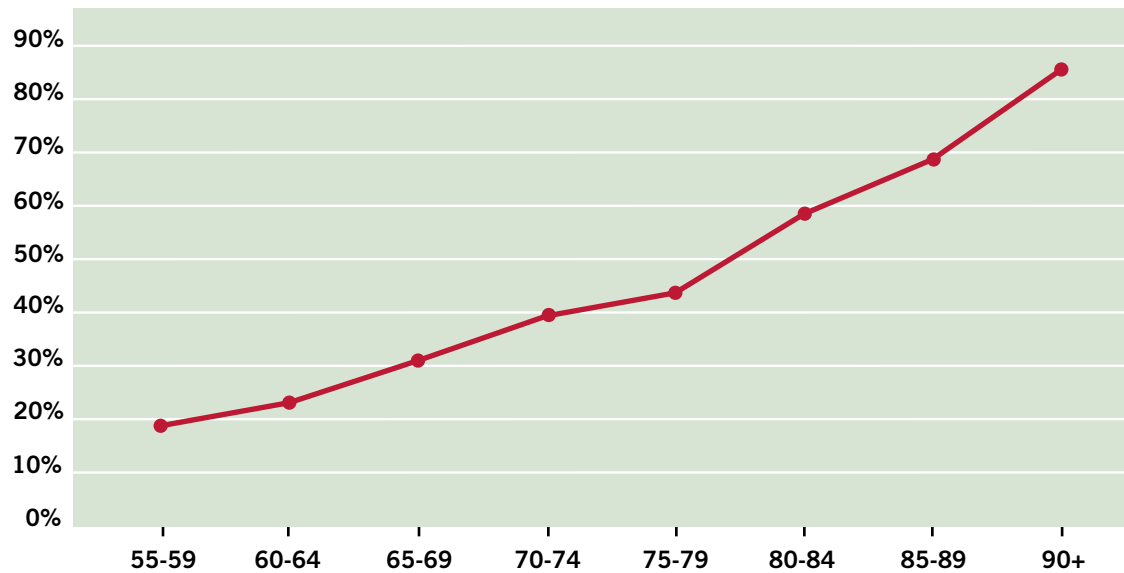


was only slightly less, accounting for about 27 percent of all jobs over age 70 (Figure 2-5). Another one in six (17 percent) of these older workers was in the service sector, with somewhat smaller percentages engaged as craftsmen/operatives and in manual labor.

HOURS AND PAY

People may change their attitudes about work and compensation as they age. According to one analysis of HRS data, older people clock fewer weeks and fewer hours than do younger workers, and median wages decline with age (Haider and Loughran 2001). To some degree, the researchers speculate, this is because older workers engage in more part-time employment than do their

FIG. 2-6

SELF-EMPLOYMENT AMONG WORKERS, BY AGE: 2002*(Percent self-employed among persons working for pay)*

younger counterparts. Even among full-time workers, though, the study found a substantial drop in wages with increasing age, and wage declines occurred regardless of a person's level of education. In such cases, it appears that even the most educated workers are willing to work for relatively low wages at older ages.

JOB FLEXIBILITY

Among workers over age 50, older people appear to have more flexible work arrangements than do younger people, as suggested by the increasing proportion with age of those who are self-employed and the significant percentage of older workers saying they could reduce their work hours if they

wanted. In 2002, fewer than 20 percent of working people in their late 50s were self-employed, compared with nearly 40 percent at ages 70 to 74 and well over half of those age 80 and older (**Figure 2-6**). Perhaps surprisingly, a study that combined HRS data with information from the Census Bureau's ongoing Current Population Survey found that self-employed people have higher household incomes and wealth than do wage earners (Karoly and Zissimopoulos 2004). This likely reflects the fact that the latter group often has pension plans (i.e., future wealth), whereas many self-employed people accumulate retirement resources in other forms. It also is important to note that self-employed people are less likely than other workers to have health insurance.

Among people working for pay and not self-employed in 2002, the percentage who said they could reduce their working hours increased from 30 percent at ages 55 to 59 to 63 percent at ages 75 to 79. A similar but less pronounced age pattern was seen among those who wanted to *increase* their working hours. Whether such flexibility is necessarily to a worker's advantage or not is a more complicated issue. An analysis of 1998 HRS data found the same pattern of increasing flexibility with age, but as noted earlier, suggested that older workers may sometimes attain job flexibility at the expense of lower wages (Haider and Loughran 2001). Moreover, these data could overstate the ability of older workers to adjust their work hours if a significant proportion of workers retire at least partly because they do not have job flexibility.

The issue of flexibility in working hours is attracting considerable attention as companies and society attempt to find satisfactory accommodations for the aging labor force. Many jobs require that an individual work full-time or not at all. One recent HRS analysis looked at the effects on retirement of non-wage aspects of employment. The analysis concluded that this "minimum hour" constraint is the major firm-side factor affecting the retirement experience in America, and that it is much more important than factors such as job stress, perceived discrimination, and early retirement windows. A significant shift in employer policies regarding all-or-nothing working hours would propel major changes in the balance between partial retirement and full retirement (Gustman and Steinmeier 2004a). In anticipation of such changes, researchers are using HRS data to build models that estimate the potential impact on the Social Security system.

Another indicator of employment flexibility might be whether or not workers would consider looking into new jobs. HRS data suggest that people become less willing to explore new job opportunities

as they age—often because they may risk losing their benefits. In 2000, HRS participants who worked were asked, “If you found out about another job like the one you have now, would you look into it?” Overall, three-quarters of those surveyed answered “no” or “probably not,” and the percentage answering in the negative rose with age (**Figure 2-7**). While a “no” answer might indicate satisfaction with one’s current job, analysis of the same question in earlier HRS waves indicated that a substantial percentage of respondents felt that they were locked into their current jobs because they might lose pensions or health insurance benefits if they were to change to a new employer.

REASONS PEOPLE RETIRE

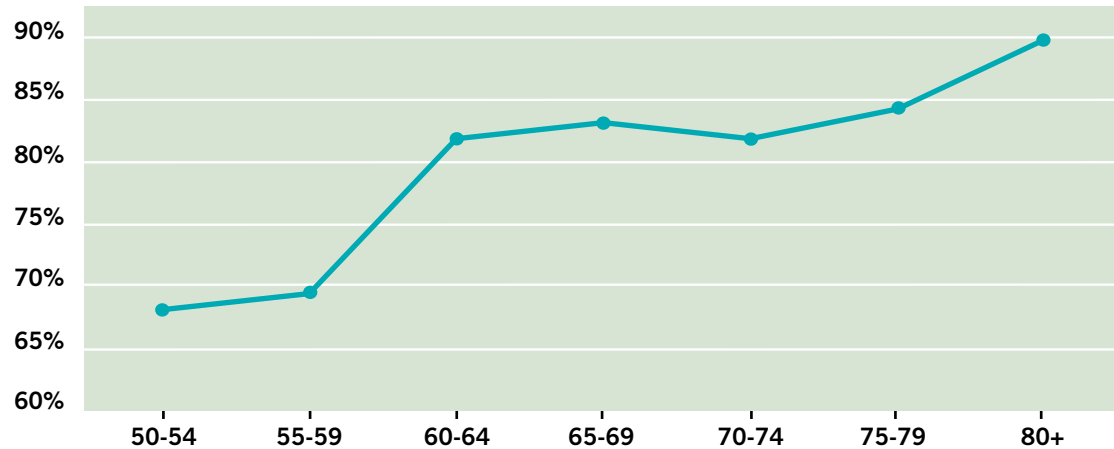
The availability of economic resources (discussed later in this chapter) may be paramount in the retirement transition, but there are other critical dimensions to the retirement decision and to what might be labeled “positive retirement.” HRS respondents who said they were completely retired in 2002 were asked about four possible influences on their decisions to stop working: poor health, wanting to do other things, not liking their work, and wanting to spend more time with family.

More than one-third of those who retired between 2000 and 2002 said that spending more time with their families was a very important reason for retirement, and roughly one-fourth also cited “wanting to do other things.” Poor health was a very important factor for 35 percent of retirees in the 55 to 59 age category, but the importance of poor health as a motivating factor for retirement dropped consistently with increasing age (**Figure 2-8**). In keeping with findings noted earlier in this chapter about enjoyment of work, fewer than 10 percent of respondents were motivated to retire by a strong dislike of their work.

FIG. 2-7

WILLINGNESS TO CONSIDER CHANGING JOBS, BY AGE: 2000

(Percent answering “No” or “Probably not” to “If you found out about another job like the one you have now, would you look into it?”)

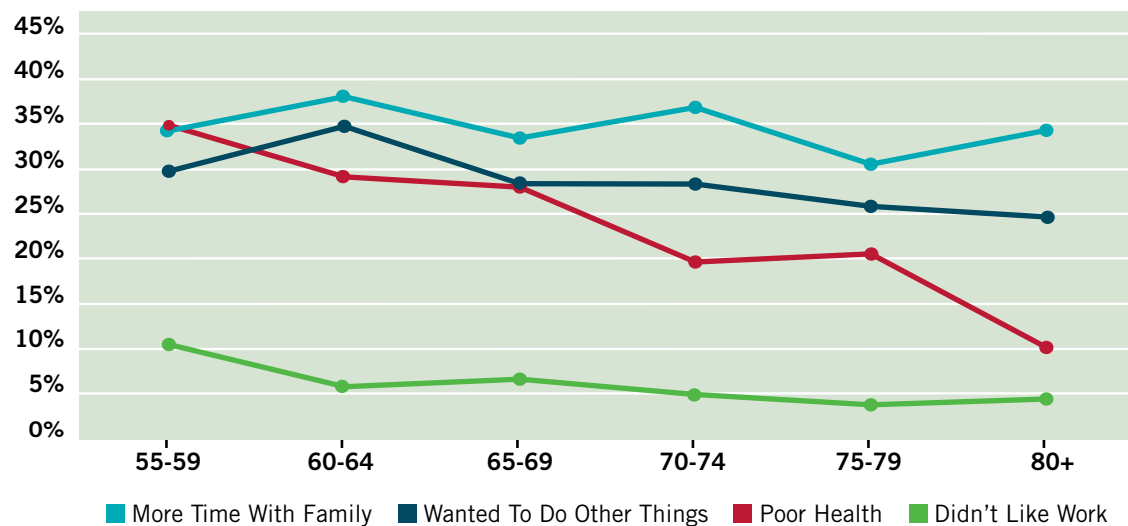


Source: HRS 2000.

FIG. 2-8

MOTIVATIONS TO STOP WORKING BETWEEN 2000 AND 2002, BY AGE

(Percent reporting that the reason was “very important”)



As more and more women enter the workforce, researchers have become interested in how retirement incentives interact in two-earner families. Johnson et al. (2000) used four waves of HRS data to describe the joint retirement decisions of husbands and wives. They found that people were less likely to retire if their spouses were still working than if their spouses had already retired. If one spouse had stopped working involuntarily because of health problems, though, the other spouse was less likely to retire than if the spouse had voluntarily retired.

Using HRS data from 1992 to 2000 along with linked pension information, Coile (2003b) argues that women are highly influenced by their own economic incentives when making retirement decisions and are not simply following the leads of their husbands. Gustman and Steinmeier (2002b), looking at the value that respondents placed on joint leisure time, found that this measure accounted for much of the household interdependence in retirement decisions.

Another factor that may influence people's retirement decisions is involuntary job loss. Past research on the effects of job loss often excluded consideration of older workers, because it was difficult to distinguish between “normal” retirement and job displacement. HRS data afford the possibility to track transitions into and out of the labor force. A multi-wave study of such transitions among older workers found large and persistent effects of job loss on the likelihood of future employment (Chan and Huff Stevens 2001). Looking at people 2 years after they lost a job at age 55, labor force participation rates were 60 percent for men and 55 percent for women, compared with more than 80 percent for people who had not suffered job displacement. Four years after a job loss, there was still a gap of about 20 percent between the displaced and nondisplaced groups.

HEALTH VERSUS FINANCIAL FACTORS

Many studies have explored the relationship between health and retirement, but they often have differed in their conclusions as to whether health or financial variables are more important in the decision to retire. Some of the difference is attributed to problems with correctly measuring health status and some to the belief that individuals may report poor health as a justification for early retirement. One analysis of early HRS data (McGarry 2002) found that subjective reports of health more strongly influence the transition to retirement than do financial variables. Poor health was strongly correlated with the decision to leave the labor force. These important but basically unsettled questions about health reasons versus financial reasons for retirement are the subject of continuing research.

THE ROLE OF MEDICARE AND PRIVATE HEALTH INSURANCE

HRS data have been used to probe the complex relationship between health insurance and retirement behavior. For example, HRS data have proven valuable in simulating the impact of raising the age of Medicare eligibility as one measure for maintaining the solvency of Medicare, the Federal health insurance program for people age 65 and older. One analysis implied that increasing the Medicare eligibility age from 65 to 67 would reduce overall retirement rates by less than 5 percent (Johnson 2001). Approaching the issue from a different angle, other research concluded that expanding the Medicare program to cover people ages 62 to 64 would result in a modest increase (7 percent) in the retirement rate among workers who currently lack employer-sponsored health benefits (Johnson et al. 2003). These intriguing findings open the door to additional studies in this arena.

Researchers have employed HRS data to examine other aspects of the role of health insurance in retirement decisions. These studies generally reach the same conclusion—that health insurance costs discourage retirement, but only modestly. For example, Blau and Gilleskie (2003) found that health insurance costs have a relatively small impact on labor force participation at older ages, at least among men. One important factor is whether or not an individual's employer-provided health insurance coverage continues after he or she leaves the job. HRS data also show that workers whose coverage continues are more apt to leave the labor force early (e.g., at age 62) than are workers whose health insurance is “tied” to actually being employed (French and Jones 2004).

DISEASES AND RETIREMENT

Another important use of HRS data has been to estimate the economic impact of particular diseases in terms of workforce participation and early retirement. For example, a study that followed diabetics in the original (1992) HRS cohort over an 8-year period revealed major income and productivity losses associated with the disease (Vijan et al. 2004). Extrapolating results to the national level, the researchers estimated that the total income loss for those who were disabled at baseline was already an incremental \$60 billion relative to people without diabetes. Over the 8-year study period, individuals disabled by diabetes lost another \$15 billion in productivity. Further, the diabetes-related increase in incident risk of disability, mortality, sick days, and retirement led to \$59 billion in lost productivity over the same period. The study authors note that, with the rising incidence of diabetes in the United States, future losses in workforce participation from diabetes are likely to be even greater.

TRENDS IN RETIREMENT TIMING

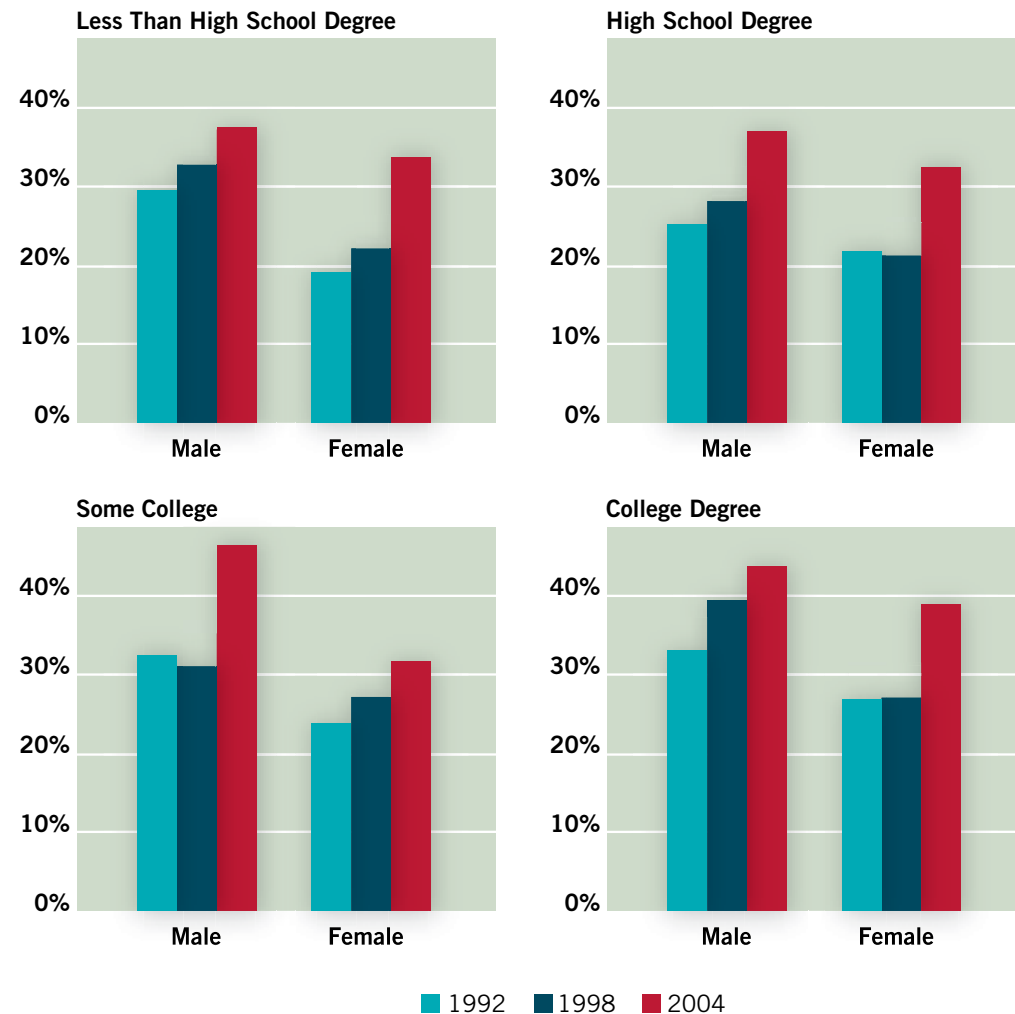
Two studies comparing HRS data with data from the 1970s show how the timing of retirement has shifted over the past 30 years (Gustman et al. 1995; Gustman and Steinmeier 2001). The fraction of workers in the HRS leaving the labor force at age 65 is half as large as studies in the 1970s indicated, while the proportion leaving at age 62 is twice as large. These studies have raised interesting questions about the meaning and definition of retirement. For example, the age of retirement was found to be higher if it is based on the age at which people report themselves to be completely or partially retired, rather than on hours or weeks of work. HRS analyses are part of a growing body of research seeking to characterize the influence that public and private pension policies, both in the United States and abroad, may have on the retirement decisions of millions of individuals.

One innovative aspect of the HRS involves asking participants about matters such as life expectancy, bequests, and future work plans. For the most part, people's expectations in these areas align with what eventually happens. For example, HRS data show a strong relationship between measures of expected retirement and actual retirement. Perhaps, these data suggest, measures of retirement expectations are a useful policy barometer for future behavior. Further, different groups' expectations about working past age 65 may be changing (**Figure 2-9**). People ages 51 to 56 with different levels of education were asked at three time points about the chances that they would be working full-time after reaching age 65. The results suggest that an increasing proportion of people in their early to mid-50s expect to be working full-time after age 65. The differences between 1992 and 2004 are striking, and the highest

FIG. 2-9

EXPECTATION OF WORKING FULL-TIME AFTER AGE 65, BY EDUCATION: RESPONDENTS AGES 51-56 IN 1992, 1998, AND 2004

(Percent expecting to work after age 65)

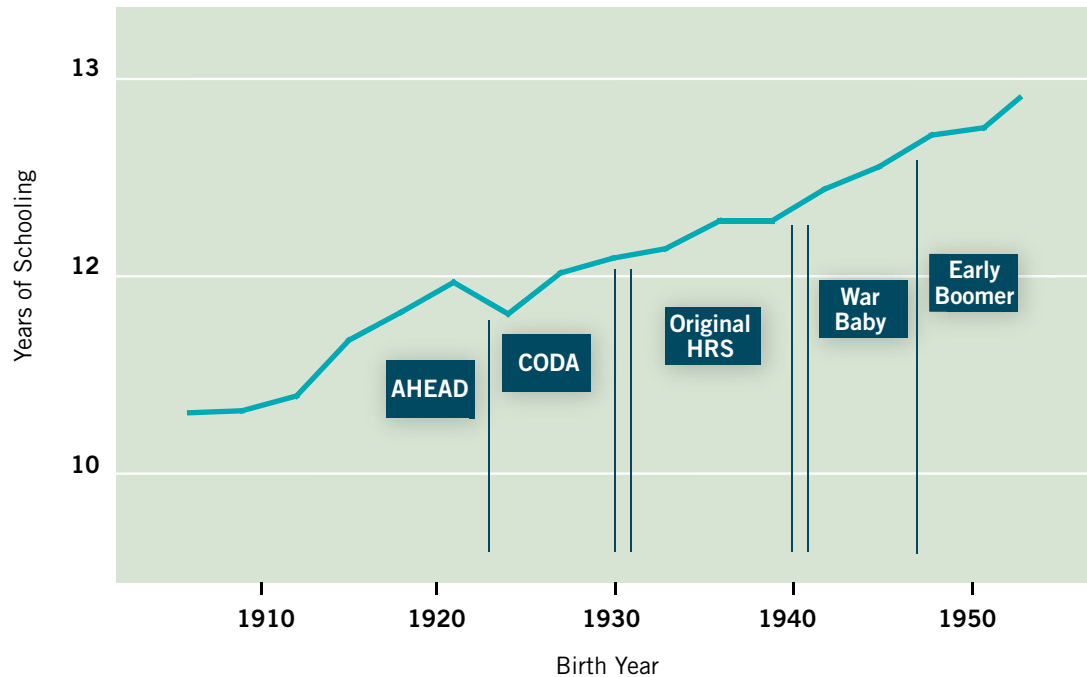


Source: HRS 1992, 1998, and 2004.

FIG. 2-10

CHANGE IN EDUCATIONAL ATTAINMENT OF SUCCESSIVE COHORTS IN THE HRS

(Average years of schooling by birth year)



Note: See page 16 for a description of the cohort labels.

levels are generally seen among those who have attended or graduated from college.

Figure 2-10 demonstrates the rise in level of educational attainment across successive cohorts of older Americans. Increased education is associated with higher lifetime earnings and wealth, longer work lives, better health, and greater cognitive capacity to deal with complexity. The upward trend in **Figure 2-10** will continue, and combined with the expectations drawn in **Figure 2-9**, may result in a very different older workforce fabric than that seen today.

EARLY RETIREMENT INCENTIVES

Early retirement offers influence some workers' decisions to leave the workforce before the typical retirement age of 65. However, information about the prevalence and impact of early-retirement opportunities is not generally available in national household surveys, and most of what is known to date comes from case studies of individual employers and client surveys conducted by compensation consultants. The HRS not only provides the first national data on trends in early retirement offers, but also follows workers to learn whether

they go to work elsewhere or retire altogether after accepting such offers.

In 1992, HRS participants were asked if they had ever been offered an early retirement window, and during re-interviews conducted every 2 years, they were asked if they had received such an offer since the last interview. The surveys show that 15 percent of Americans ages 51 to 61 who were working in 1992 had received early retirement offers from their employers by the year 2000 (Brown 2002). The frequency of such offers appeared to peak in the mid-1990s. Just under 5 percent of workers ages 55 to 59 in 1992-1996, compared with less than 2 percent of workers in that age group in 1990 and in 2000, were offered "early-outs."

Only about one-third of early retirement offers received were accepted, and about three-fourths of those who accepted the offers said they would not have retired at that time without the special, time-limited inducements. Slightly more than half of the offers accepted included cash bonuses, and the median amount of the bonuses (in 1992 dollars) was \$23,800—about \$1,000 more than in rejected offers. Improved pension benefits were included in 36 percent of the accepted offers, but only in about a quarter of the rejected offers.

In general, workers who received early-out offers were better paid, were almost always covered by pension plans, and had been with their employers longer than workers who did not receive such offers. About two-thirds of workers who received an early-out offer were male, and about 40 percent were college graduates. Those receiving early-retirement offers were 12 percent less likely to be employed in 2000 than those who did not receive such offers, with the effect of reducing the 2000 employment rate of this age group by about 2 percent, according to researcher estimates. However, nearly one-third of those

who accepted an early retirement offer went to work for another employer.

GRADUAL RETIREMENT

From the outset, the HRS has consistently shown that three out of every four older workers have said they would prefer to reduce hours gradually rather than retire abruptly. Nevertheless, the most common retirement pattern is from full-time work to complete retirement. This pattern likely results from employers' lack of flexibility about work hours (e.g., in accommodating older workers' desire to work part-time). One study followed working HRS participants for 6 years (to the ages of 57 to 67) and found that, despite the preference for gradual retirement, only 13 percent called themselves "partially retired." Approximately 45 percent reported that they had fully retired, while 42 percent reported that they had not yet retired at all. Interestingly, 17 percent of older workers said they had actually increased their work effort at some point between 1992 and 1998, although it is not known whether the additional time at work reflects an increase in hours or a return to full-time or part-time work after retirement.

PENSION PLAN TRENDS AND RETIREMENT

The recent reversal of the trend toward early retirement is believed to be due, at least in part, to changes in retirement incentives within the Social Security program and to the elimination of mandatory retirement. Another factor may be changes in private pension plans. Over the past 20 years, defined-contribution plans such as 401(k) plans have become much more widespread. Unlike defined-benefit plans with fixed annual pension benefits, these plans do not have the built-in subsidies for early retirement.

TBL. 2-4

EXPECTED RETIREMENT AGES, BY PENSION COVERAGE CHARACTERISTICS

(Persons who were working in 1992)

	No Pension Coverage	Defined-Benefit Pension Coverage	Defined-Contribution Pension Coverage
Base Retirement Age	65.1	65.1	65.1
Effect of Pension Plan Characteristics		-0.7	0.2
Effect of Pension Wealth		-0.5	-0.1
Expected Retirement Age	65.1	63.9	65.2

Source: Munnell et al. 2003.

Two studies using HRS data to assess the effect of the changing pension landscape have concluded that pension changes have indeed contributed to the reversal of the trend in early retirement. Friedberg and Webb (2003) argue that the spread of defined-contribution pension plans helps explain the increase in labor force participation among older workers, and further suggest that the median retirement age will continue to rise.

A second study looked at retirement expectations for HRS participants who were working in 1992 (Munnell et al. 2003). The expected retirement age for workers with defined-benefit pension plans was 63.9 years, compared with 65.2 years for workers with defined-contribution plans. The study authors identified two aspects of defined-benefit coverage that are responsible for this difference: pension plan characteristics and pension plan wealth. The characteristics of defined-benefit plans (e.g., early retirement incentives, lifelong benefits, and reduced

investment risk) were estimated to move up a person's expected retirement date by about 8 months, and the amount of wealth in the plan moved up the expected retirement age by an additional 6 months, on average (**Table 2-4**). In contrast, the characteristics of defined-contribution plans were estimated to move back the expected retirement date by about 2 months, while the amount of wealth in the plan moved up the expected retirement date by about 1 month.

The change in the types of pension plans adopted by employers may do more than influence the timing of retirement, however. One study using HRS data found that people with defined-benefit plans are more likely to be "very satisfied" with retirement, compared with those without such plans (Panis 2003). Moreover, retirement satisfaction among people without defined-benefit pensions tends to sour during the course of retirement, while the satisfaction among defined-benefit plan pensioners

TBL. 2-5

RETIREMENT SATISFACTION, BY DEFINED-BENEFIT PENSION RECEIPT AND RETIREMENT DURATION: 2000

	Not At All Satisfied	Moderately Satisfied	Very Satisfied
With a Defined-Benefit Pension			
0–1 Years Retired	5.6%	30.5%	64.0%
2–4 Years Retired	4.1	27.3	68.6
5-10 Years Retired	5.3	28.5	66.2
10+ Years Retired	5.4	27.3	67.3
Without a Defined-Benefit Pension			
0–1 Years Retired	10.9%	31.4%	57.7%
2–4 Years Retired	13.5	32.3	54.2
5-10 Years Retired	11.7	36.3	52.0
10+ Years Retired	14.6	38.6	46.9

Source: Panis 2003.

remains relatively constant (**Table 2-5**). People with defined-benefit plans also tend to develop depressive symptoms at a notably slower pace than those without such plans.

KNOWLEDGE ABOUT PENSION PLANS

In the present environment of changing pension provisions and potential Social Security reform, knowledge and expectations about future public and private pension benefits have greater salience than in the past. Workers are faced with many issues and choices that have both a financial dimension (e.g., that related to financial literacy, money management, and knowledge about public and private programs) and a “future assessment” dimension (e.g., that related to expectations about survival, the need

for long-term care, stock market trends, inflation, and public policies).

An early assessment of older workers’ knowledge about their retirement benefits painted a very mixed picture (Ekerdt and Hackney 2002). The vast majority of HRS respondents in 1992 were aware of the eligibility ages, distributions, and investment options associated with their employer-provided pensions. When asked to project personal pension wealth, though, one-third of workers in defined-benefit plans could not estimate an expected benefit amount, while one-fifth in defined-contribution plans did not know their account balances. More than half of respondents could not estimate their expected Social Security benefit, and one in seven did not know if their health insurance continued into retirement.

A later analysis, of 1992 to 1998 HRS data, found a similar lack of knowledge among older workers about their pension plans (Gustman and Steinmeier 2004c). With HRS participants’ permission, the researchers obtained Social Security Administration data about participant-specific earnings/benefits, and obtained detailed pension plan descriptions from companies offering private pensions. This information was compared with participants’ self-reported knowledge of their Social Security and pension values and characteristics. Among respondents with linked pension data, only half correctly identified their pension plan type, and fewer than half correctly identified ages of eligibility within one year of the actual value. People who were close to retirement age (i.e., within 3 years) did only somewhat better at forecasting their ages of early retirement eligibility than did the sample as a whole.

Lack of knowledge appears to have real consequences. One study compared the wealth and investment patterns of people who had received financial education at work with the patterns of those who had not, finding that financial education was associated with higher savings and higher wealth (Lusardi 2004). Such findings underscore that educating people about retirement planning makes a difference in how well they plan.

THE IMPACT OF STOCK MARKET CHANGES ON RETIREMENT

Changes in the stock market can have an important impact—either positive or negative—on older workers’ assets and decisions to retire, researchers tapping the HRS data have found. One study analyzed HRS data from 1992 to 2000 to estimate the effect of dramatic stock market changes on retirement (Gustman and Steinmeier 2002a). The study suggested that a stock market

boom such as that experienced in the late 1990s can raise the likelihood of retirement by about 3 percentage points per year for people near retirement age, and that the effect continues for several years. On the other hand, the researchers note, a stock market collapse of similar magnitude to the boom of the 1990s would produce a roughly equivalent reaction in the opposite direction. The investigators also found that the impact of a market boom is likely to be moderated by other factors, the most important being that many people nearing retirement age have rather limited assets overall in terms of savings or defined-contribution pension wealth (see Chapter 3).

Other studies also have attempted to isolate certain effects of stock market changes on retirement behavior and well-being. One analysis compared retirement expectations as stated by HRS participants in 1992 with actual retirement behavior by the year 2000 (Coronado and Perozek 2003). After controlling for a number of intervening factors, the study concluded that the run-up in stock market prices during the 1990s induced HRS stockholders to retire about 7 months earlier than those who did not own equities. Another investigation focused on 2000 to 2002, a period when stock prices declined substantially (Kezdi and Sevak 2004). Combining HRS data with Current Population Survey data, the investigators found that households reduced their food consumption in response to the decline in wealth.

RETIREMENT AND CONSUMPTION

Studies in the United States and the United Kingdom have shown that reduced household spending at ages associated with retirement is greater than predicted by standard economic theory. This leads to the question of whether households realistically anticipate their retirement consumption needs or are forced to lower their living

TBL. 2-6

EXPECTED AND ACTUAL CHANGES IN RETIREMENT SPENDING: 2000-2001

		Expected Changes Before Retirement	Actual Changes After Retirement
Trips, Travel, or Vacation	Decrease	38.5%	44.7%
	Same	32.5	30.4
	Increase	29.0	24.9
Clothing	Decrease	65.2	60.5
	Same	32.8	32.9
	Increase	1.9	6.6
Eating Out/ Food & Beverages	Decrease	52.5	40.4
	Same	38.6	36.3
	Increase	8.8	23.3
New Home, Home Repairs, or Household Items	Decrease	53.2	37.1
	Same	39.4	45.5
	Increase	7.4	17.4
Entertainment, Sports, and Hobbies	Decrease	46.4	44.4
	Same	40.4	45.0
	Increase	13.2	10.6
Automobile Expenses	Decrease	45.1	29.4
	Same	47.3	51.0
	Increase	7.6	19.6

Source: Hurd and Rohwedder 2004.

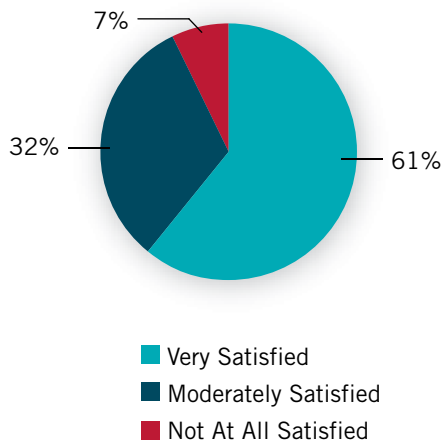
standards beyond their expectations. Using 2000 HRS data and information from a special 2001 HRS Consumption module, Hurd and Rohwedder (2004) compared expected and actual changes in spending at retirement. They found that most people expect their spending declines to be greater than they actually are (**Table 2-6**). In other words, people on average seem to be pleasantly

surprised by their level of retirement resources, relative to pre-retirement worries about the adequacy of retirement income.

ENJOYMENT OF RETIREMENT

Previous studies have indicated that retired people report more loneliness and unhappiness than

FIG. 2-11
LEVEL OF SATISFACTION WITH RETIREMENT: 2000

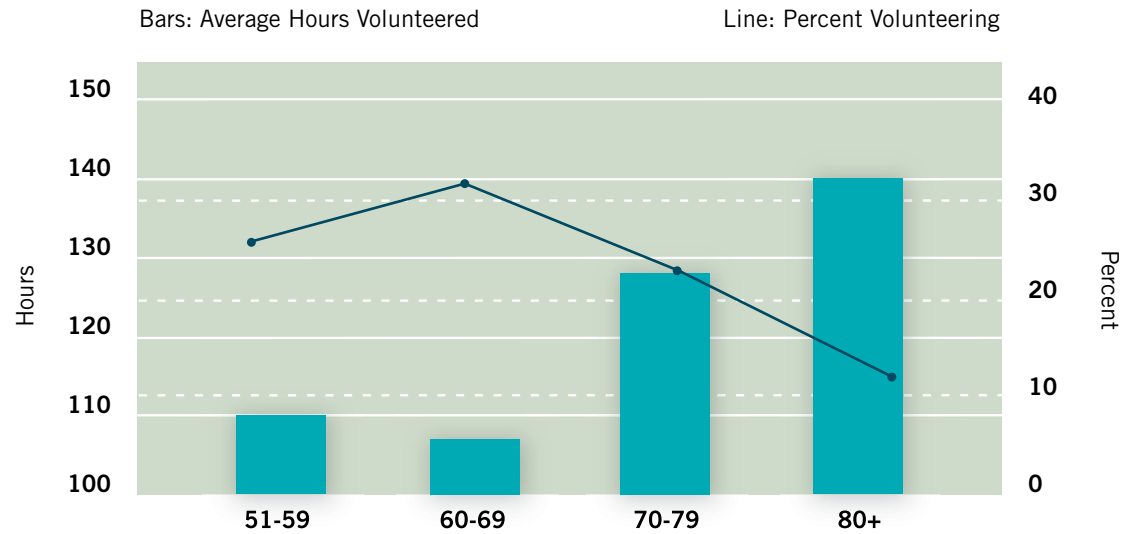


Source: HRS 2000.

do people who are working. One might ask whether retirement makes people lonely and unhappy, or if people who were lonely and unhappy to begin with are more apt to retire. A study of retired male HRS participants in the mid-1990s who had not been working for at least a year showed that the latter was the case. That is, unhappy and lonely individuals were more likely than others to retire. After controlling for this predisposing condition, it turns out that retirement actually tends to make people happier and less lonely (University of Michigan 2002).

Another researcher used 2000 HRS data to gauge people’s overall retirement satisfaction (Panis

FIG. 2-12
VOLUNTEER WORK FOR CHARITABLE ORGANIZATIONS, BY AGE: 1996-1998



Note: Average hours volunteered refers to the average among respondents who volunteered some amount of time during the reference period.

Source: HRS 1998.

2003). When retirees were asked how satisfying their retirement has turned out to be, a majority (61 percent) said “very satisfying” (**Figure 2-11**). One-third of respondents reported moderate satisfaction, and only 7 percent indicated that their retirement was not at all satisfying.

HELPING OTHERS

Volunteer work is another important dimension of work. The HRS asks about the amount of time that respondents spend volunteering for charitable organizations. In 1998, people were asked how much time they had volunteered during the preceding 24 months. People ages 60 to 69 at the

time were most likely to have engaged in volunteer service, with one in three people in that age group having done so. The proportion of respondents who volunteer declines as people reach advanced age (**Figure 2-12**). However, among those who do volunteer, the average number of hours increases with age. Other research using HRS data has shown that volunteer work is associated with maintaining good health (Luoh and Herzog 2002).

INCOME & WEALTH



CHAPTER 3: INCOME & WEALTH

Americans have been raised to believe it is unseemly—if not risky—to discuss money and wealth. Such attitudes about money and disclosing personal information have made it difficult for researchers to study these variables with confidence. The Health and Retirement Study (HRS) was designed to overcome many traditional survey obstacles by building the trust of participants and by using innovative data collection strategies that capture valuable information from participants with imperfect knowledge or who are unwilling to provide precise figures, while at the same time protecting participants' confidentiality.

Not only has the HRS broken new ground in terms of how data are collected, but its blend of economic, health, and social variables also affords researchers unprecedented possibilities to study increasingly complex questions about the retirement transition. These detailed characterizations of income and wealth over time are hallmarks of the HRS. With looming changes in Social Security and private pension plans, plus dramatic turns in recent years in the stock and housing markets, HRS data can provide critically important insights into the pending retirement of the baby boom. For income alone, for example, scientists can look at trends in income distribution and composition; income differences from one generation to the next; patterns of income as individuals age; changes in income as people experience retirement, widowhood, and health events; and income variations across occupations and employers.

This chapter examines the topics of income and wealth among older Americans as they prepare for and transition into retirement. It discusses HRS participants' levels and sources of income, the relationship of health to income and wealth, pre-retirement saving behavior, wealth and its distribution among subgroups of older Americans, the role of pension plans, and housing equity.

CHAPTER HIGHLIGHTS

The HRS data provide evidence that there are immense differences in income and wealth among older Americans. Further, the components of income and wealth among households vary greatly, and the correlations between financial well-being and marital and health status are very strong.

- **There are enormous variations in income among Americans over age 50.** For people ages 55 to 64, average income in married households ranges from about \$20,000 among the poorest fifth of households to more than \$200,000 among the highest income group (in 2002). Average income levels are much lower in older households, ranging from \$13,000 in the lowest

income group to about \$120,000 in the highest income group among people age 85 and older. Social Security benefits provide more income than any other source for more than 60 percent of households whose members are age 65 or older.

- **Variations in wealth among older Americans are even more striking than variations in income.** Married people in the lowest fifth of the wealth distribution have little wealth to speak of, while the poorest 20 percent of unmarried individuals have negative net worth. This contrasts with married and unmarried households in the highest fifth, averaging \$1.5 million and \$800,000. However, even among people with the same

total income over their lifetimes, the variance in retirement wealth is large. For most households, the value of one's home is the most important part of their wealth.

- **Many Americans save little—or nothing—for retirement.** In 1996, HRS respondents saved roughly 3 percent of their median 10-year income in the decade prior, and more than one-third of HRS participants said they have saved nothing for retirement. Nearly three-fourths felt they had not saved enough and said they would save more if they had it to do over again. Only a third of those working said they planned to save more. Those in poor health who were nearing retirement were less likely to save for retirement.

- **The relationship between health and wealth can now be studied in a dynamic setting over time, and the interactions of the two are important for people approaching retirement.** Unexpected health events in particular can mean a substantial and ongoing financial loss from which people may never recover. People who had a major unexpected health event, such as heart attack or stroke, in 1992 experienced an average cumulative income loss of nearly \$37,000 between 1992 and 2000, compared with \$8,700 for a minor health event. The impact on household wealth was also substantial. On average, loss of earnings rather than out-of-pocket medical costs were the major factor in the loss of wealth.
- **Health also affects the composition of financial portfolios.** Those in poor health tend to have less risk (that is, a lower proportion of stocks) in their portfolios.
- **Financial well-being is strongly related to the health of both partners.** In the original HRS sample, average household net worth was \$31,000 when both partners were in poor health but more than \$400,000 when they were in excellent health.
- **Changes in marital status strongly influence women's wealth.** After being widowed, women lose significant wealth—and women's poverty rate rises substantially over the course of widowhood—but the negative consequences may be worse after divorce and separation.

AMOUNT AND SOURCES OF INCOME

Data from the 2002 HRS show large variations in total household income and highlight the importance of particular sources of income (assets, pensions, Social Security, and earnings) by the total household-income level and age of

HRS participants. **Figure 3-1** (for married HRS participants) and **Figure 3-2** (for unmarried HRS participants) divide people into five groups, or quintiles, to illustrate the large variation in income across households (i.e., the “lowest quintile” includes the one-fifth of HRS households in each age group that have the lowest income levels, and the “highest quintile” includes the one-fifth of HRS households in each age group that have the highest income levels).

Figure 3-1 highlights the differences in 2002 income and sources of income within each age group of married respondents. For example, among participants ages 55 to 64, average household income for those in the middle income group (i.e., the third quintile) is about \$60,000, compared with about \$20,000 in the lowest income group and well over \$200,000 in the highest income group. The majority of income for people ages 55 to 64 comes from salary and/or hourly wage earnings, although Social Security retirement benefits become important for many households after age 62, and Social Security disability benefits are important for some before age 62. Only in the lowest quintile, where earnings from work are low, are earnings and Social Security equally important.

With increasing age, the absolute amount of income drops significantly. Here, too, income levels differ greatly between the highest income group and the other income groups, and the composition of income also varies by quintile. Earnings are a much smaller part of total income in households after age 65, representing a large fraction of total income only in the highest fifth of participants ages 65 to 74, while pension and Social Security benefits account for at least two-thirds of total income in the other age groups. Because Social Security benefits are more evenly distributed across the population than are other income sources, they constitute a larger share of

total income when total income is low than when it is high. At age 65 and above, Social Security benefits provide more income than any other source for over 60 percent of households, regardless of marital status.

Income from assets, including stocks, bonds, checking accounts, certificates of deposit (CDs), rental properties, and business/farm holdings, is a major contributor to total income only in the highest household-income group. For these households, however, income from assets is quite important, and becomes especially so at age 85 and older. Within married households in the highest income group, asset income rises dramatically with age, comprising 16 percent of total income at ages 55 to 64, 21 percent at ages 65 to 74, 26 percent at ages 75 to 84, and 56 percent at age 85 and older.

The income-source patterns for unmarried HRS participants are generally similar to those for married households, although overall income levels in one-person households are much lower (**Figure 3-2**). The average household income for the middle quintile of unmarried people ages 65 to 74 is \$17,000, compared with nearly \$42,000 for married households. Assets produce a smaller amount of total income among unmarried people, whereas Social Security benefits are relatively more important to unmarried people than to married people. For example, Social Security benefits constitute 42 percent of total income for unmarried people ages 65 to 74, versus 29 percent for married people in the same age group.

PRE-RETIREMENT SAVING BEHAVIOR

Given the large variation in household income, it may not seem surprising that households reach retirement with very different levels of wealth. What is considerably more surprising, however, is that the variance in retirement wealth is large,

FIG. 3-1

COMPONENTS OF HOUSEHOLD INCOME FOR MARRIED RESPONDENTS, BY AGE AND INCOME QUINTILE: 2002

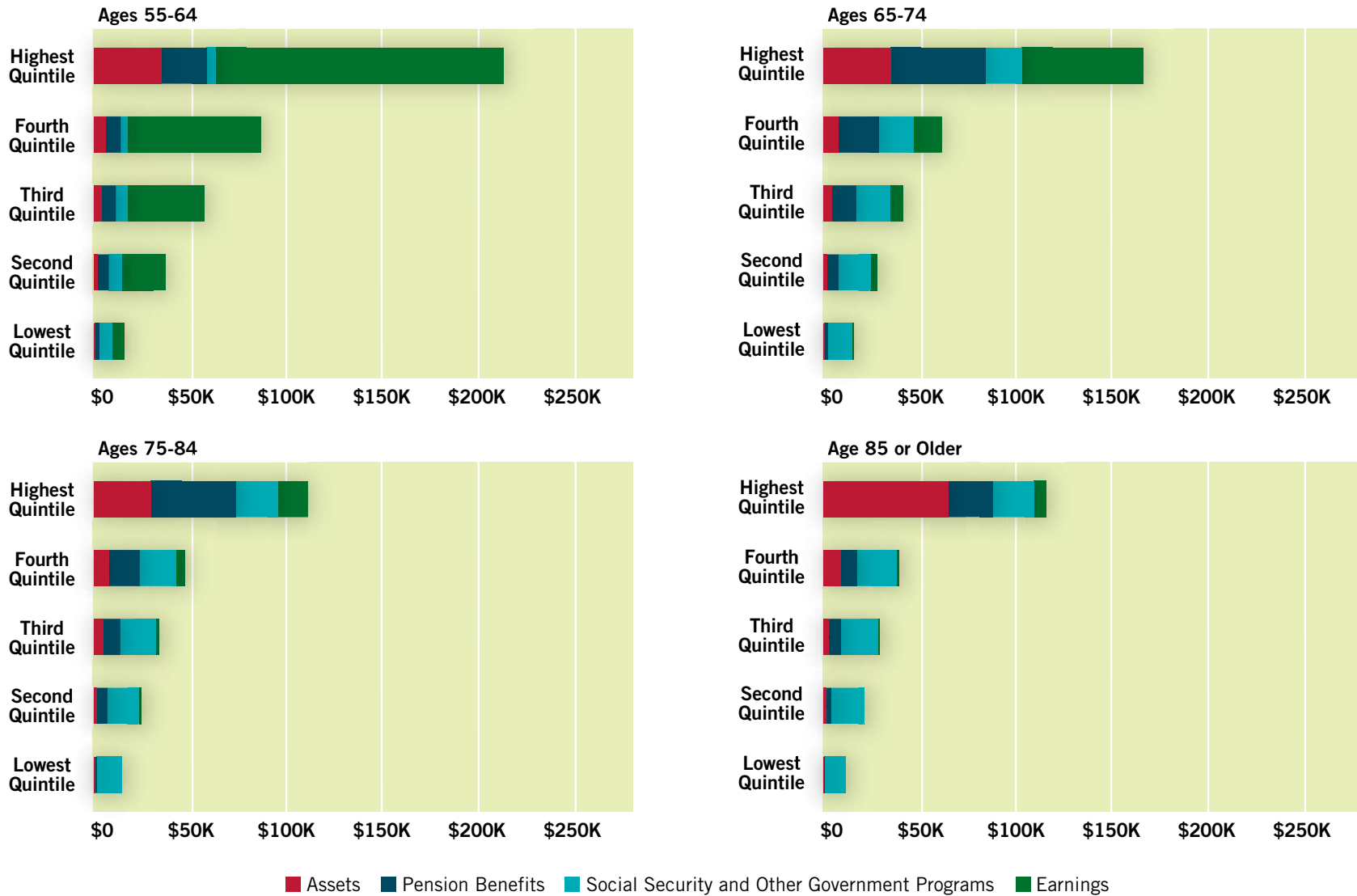
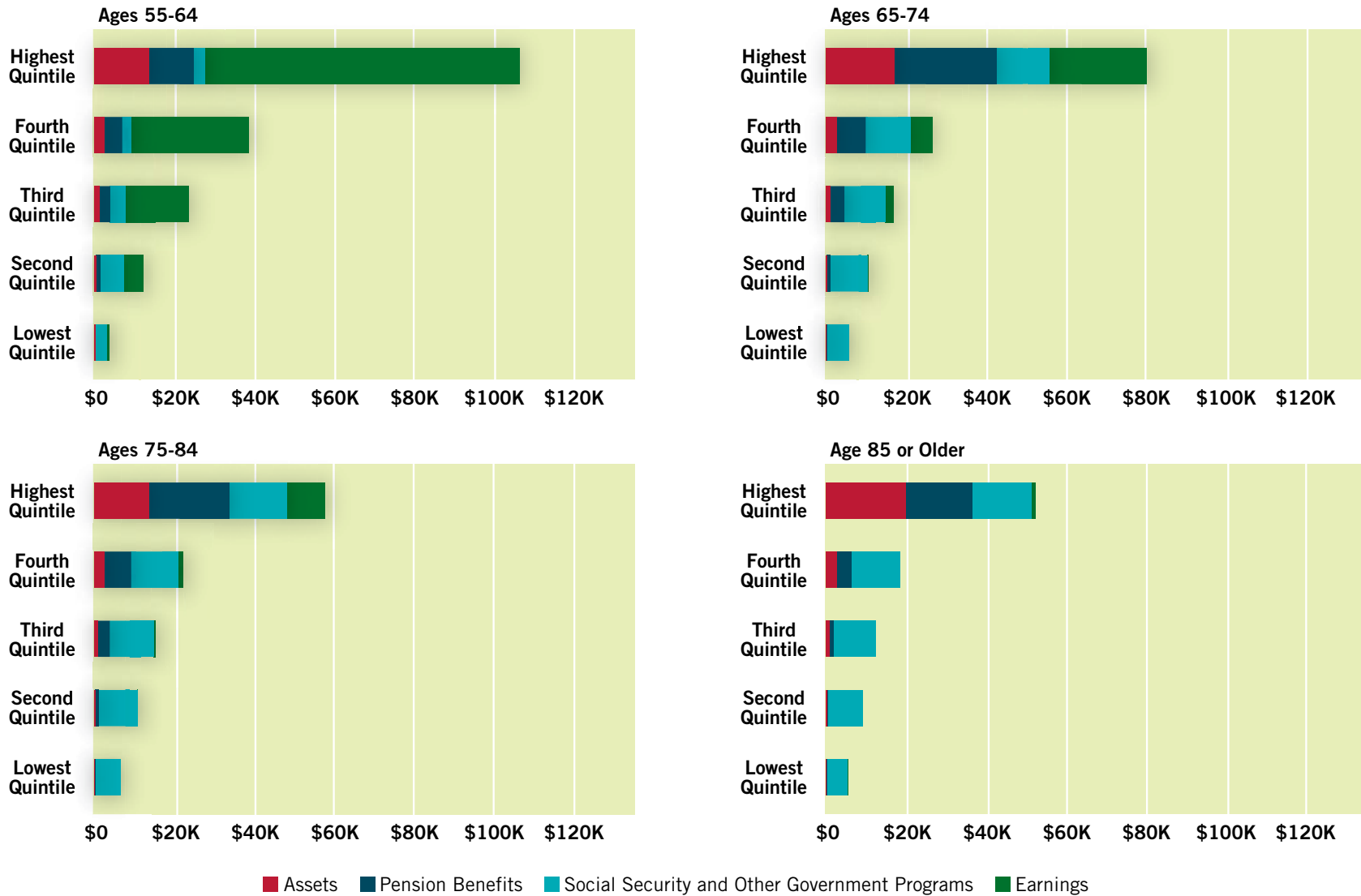


FIG. 3-2
COMPONENTS OF HOUSEHOLD INCOME FOR UNMARRIED RESPONDENTS, BY AGE AND INCOME QUINTILE: 2002



even among people with the same total income over their lifetimes (Venti and Wise 1998). In an effort to find out why, investigators have used the HRS data to examine thinking and behavior when it comes to personal savings. For example, a study using HRS data from 2000 found that a notable proportion of participants with 401(k) plans hold large amounts of their employers' stock in these plans, thus increasing the volatility and risk of their retirement wealth relative to portfolios that are more diversified in terms of common stocks and other assets (Poterba 2004).

HRS data analysts have found that many older Americans do not save enough—or save nothing—for retirement. Data from a 1996 HRS experimental module indicate that the median amount saved by people over the prior 10 years was about \$10,000—roughly 3 percent of their median 10-year income. Upon reaching retirement, about

40 percent of participants had the same amount (or less) of savings as they had 10 years earlier. More than one-third of participants had saved nothing for retirement. Nearly three-fourths of people surveyed felt that they had not saved enough, and the vast majority of that group said they would save more if they had it to do over again.

Although most working participants said that their prior saving rates had been too low, only one-third planned to start saving at a higher rate. The most common reason for not increasing savings was “low income.” A subset of participants was asked what they would do with the unexpected money if they were given a hypothetical windfall. About 70 percent said they would save it. There is little evidence, however, that people will actually change their behavior given their anticipated incomes, the study concludes (Hurd 1996).

A more recent analysis of HRS data from 1992 through 2002 estimated retirement-saving shortfalls and explored whether or not such shortfalls correlated with the likelihood of continued work at ages 62 and 65 (Au et al. 2005). The researchers looked at three categories of likely retirement assets: financial wealth, which includes business assets, stocks, bonds, individual retirement accounts (IRAs), and bank accounts; net home equity; and retirement wealth, based on the actuarial present value of future benefits from Social Security and/or private pensions. This asset information was used to derive households' projected shortfalls for retirement at ages 62 and 65, assuming typical household consumption.

The study found that the median married-couple household with an average age of 56 would need to save 17 percent more of its present earnings to be able to afford to retire at age 62 without a significant change in lifestyle. By delaying retirement until age 65, the shortfall was reduced by 40 percent, to around 10 percent of present earnings. The shortfalls were larger for households with unmarried people, but a proportionally greater gain could be achieved by delaying retirement until age 65. Controlling for a number of possible confounding factors, the researchers found that people, especially unmarried people, in households that have the greatest saving needs do in fact work longer, suggesting that people in this group recognize likely shortfalls and extend their working lives.

Research using early HRS data has also found that health makes a difference in how much people save for retirement. Lum and Lightfoot (2003) found that good health was strongly correlated with the probability that someone nearing retirement age would contribute to an IRA, as well as with the total amount of money invested in IRAs. For married people, spouses' health correlated with participants' access to employer-sponsored

FIG. 3-3
MEAN INCOME FOR MARRIED-PERSON HOUSEHOLDS, BY SELF-REPORTED HEALTH STATUS: 2002

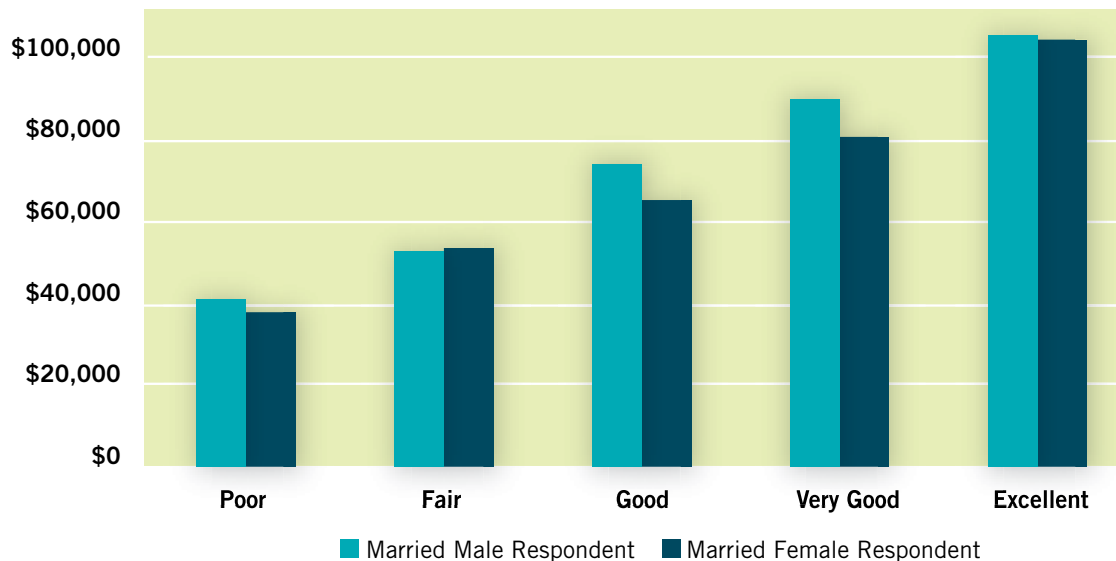


FIG. 3-4
**MEAN INCOME FOR UNMARRIED-PERSON HOUSEHOLDS,
 BY SELF-REPORTED HEALTH STATUS: 2002**



pensions, which in turn led to a higher probability of contributing to IRAs. This study highlights the policy implications of encouraging retirement savings among those whose health costs might otherwise deter participation in savings plans.

HEALTH AND INCOME

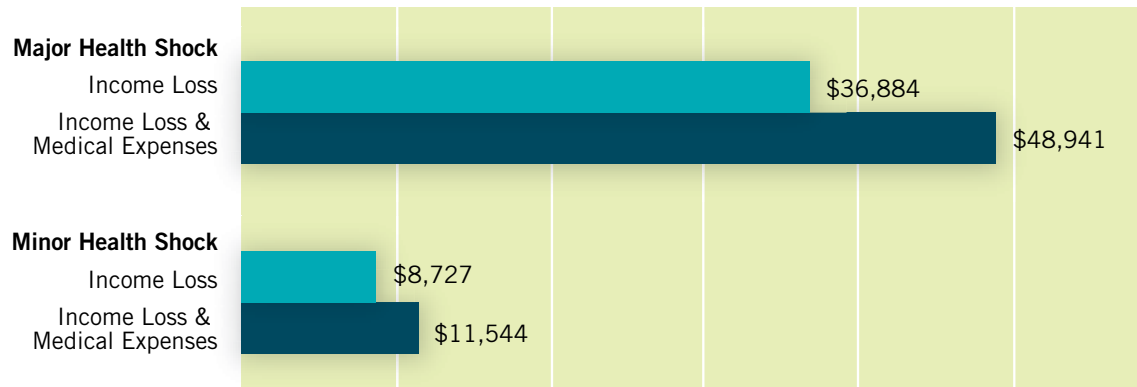
A novel aspect of the HRS is its joint focus on health and economic circumstances. The data demonstrate a strong relationship between self-reported health and income (*Figures 3-3 and 3-4*). In 2002, married and unmarried HRS participants reporting the poorest levels of health also reported the lowest mean household incomes, and, in the other direction, better health correlated with higher income. (An even sharper gradient was found for health and wealth, as discussed above.)

The data also show a large gender disparity in income for unmarried people at each level of self-reported health, with women reporting lower incomes than men. These sharp differences were not seen among married HRS participants.

UNEXPECTED HEALTH EVENTS AND INCOME

Serious health problems often arrive unexpectedly, changing many things in the lives of older households. Chapter 1 describes research on the impact of these unexpected health events on work and retirement. Researchers employing HRS data have also examined the impact of these health shocks on household income and wealth. One study estimated the impact of health events on cumulative household income over a 10-year period (Smith 2003). The analysis began by identifying major and minor health events experienced by the original (1992) HRS cohort between 1992 and 1994. Major events were defined as the onset of cancer, a heart condition, a stroke, and/or lung disease, and minor events were defined as

FIG. 3-5

CUMULATIVE INCOME EFFECTS OF NEW HEALTH SHOCKS: 1992-2000

Source: Smith 2003.

all other chronic disease onsets. The researchers then estimated the income effect of a given health event for each 2-year interval during 1992 to 2000, and the increased medical expense associated with each event.

The cumulative income loss over the 8-year period averaged nearly \$37,000 for people who experienced a major health event, and \$8,700 for those who experienced a minor health event (**Figure 3-5**). When increased medical expenses were factored in, the amounts rose to approximately \$49,000 and \$11,500, respectively. The analysis found no evidence that households regained lost income in subsequent years, meaning that the initial income losses persisted. It also appeared that members of low-income households were much more likely than those in higher-income households to leave the labor force after a health event.

SOCIAL SECURITY BENEFIT ACCEPTANCE

Economists and others have long been interested in understanding how Social Security and pension incentives affect retirement decisions and saving behavior. Most people have the option of claiming Social Security benefits any time between age 62 and age 70, with the annual benefit amount higher the older one is when benefits start. An important question is whether or not people choose the most economically advantageous age at which to start. In one study, investigators obtained earnings histories from the Social Security Administration (for HRS participants who permitted their records to be used) to determine if people were making Social Security claims to their maximum advantage (Gustman and Steinmeier 2000b). The data presented in **Table 3-1** suggest that people who retire partially or completely, especially those under the age of 65, are claiming their benefits too early to maximize the expected value of these benefits. Numerous

other studies have contrasted people who do and do not claim benefits early, with variables of study ranging from marital status to disease and health factors to educational status to union/non-union membership to employer incentives (see, for example, Burkhauser et al. 1996, Hurd et al. 2003, and McNamara et al. 2003).

CONVERSION OF INVESTMENTS TO ANNUITIES

Annuities are income payments made on a scheduled basis over a set amount of time, often for the life of the recipient. Social Security benefits and many older defined-benefit pensions are payments of this type. Annuities can also be purchased. Converting wealth into an annuity for life provides guaranteed consumption and insurance against outliving one's wealth. While this concept may seem attractive in the abstract, few people convert their investments into annuities, even though a large and growing proportion of the older population has participated in defined-contribution plans and/or contributed to IRAs. Looking at patterns over the 10-year period 1992 to 2002, one study found that only 4 percent of HRS participants with defined-contribution plans who left their jobs at age 55 or older annuitized their balances when they left (Johnson et al. 2004). Furthermore, only 13 percent of older HRS participants who withdrew funds from their IRAs converted the withdrawals into annuities.

One interpretation of these findings is that households and individuals prefer lump-sum payments, especially if they have another source of annuity income, such as Social Security. Alternatively, older adults may feel they can rely on family members for financial support in times of need, and prefer to consume or bequeath retirement benefits as desired. Another analysis suggests that voluntary annuitization rates are low among

TBL. 3-1

**SOCIAL SECURITY BENEFIT ACCEPTANCE, BY AGE AND RETIREMENT STATUS:
DATA FROM THE 1990s**

	Age			
	62	63	64	65
Percentage Accepting Benefits				
Not Retired	12%	22%	20%	42%
Partially Retired	65	77	80	90
Completely Retired	70	84	89	92
Percentage of Acceptors for Whom Acceptance was Optimal				
Not Retired	4%	9%	9%	36%
Partially Retired	13	24	23	64
Completely Retired	17	29	38	66

Notes: Data are from the first 4 waves of the HRS, from 1992 through 1998. Benefit acceptance excludes respondents who had ever received Supplemental Security Income (SSI) or Social Security Disability Insurance (SSDI) before age 65.

Source: Gustman and Steinmeier 2000a.

current retirees because a large proportion of the current HRS cohorts' wealth is already in the form of annuities (i.e., Social Security and defined-benefit plans are more important than 401(k)s in older cohorts). This situation is likely to change as younger cohorts reach older age with a higher fraction of wealth in defined-contribution accounts (Dushi and Webb 2004).

WEALTH AND ITS DISTRIBUTION

Income is an important component of old-age security, but the most critical determinant of post-retirement well-being may be the accumulation of wealth. For many older people, wealth may be the primary source of support after sources of

income, such as earnings from work, are no longer available. This chapter discusses wealth in terms of financial "net worth," which is a combination of four different types of wealth: the value of one's home(s) after deducting mortgages or other home equity debt; the value of IRAs; investments in stocks and bonds; and the value of other assets, including businesses or farms, real estate, checking accounts, CDs, transportation, and other items, again after deducting "negative assets" in the form of debt. This definition of net worth includes traditional measures of wealth but does not include entitlements to Social Security or the value of future pension income. (A more complete estimation of wealth that includes those items is described in the box on page 66.)

The 2002 HRS data reveal enormous inequality in older adults' wealth, even more than was described earlier with regard to income. As shown in **Figures 3-6** and **3-7**, regardless of age and marital status, HRS participants in the lowest quintile for net household worth have very low net worth. Indeed, average net worth for unmarried respondents in the lowest quintile is *negative* for all but the 75 to 84 age group. In stark contrast, married households in the highest wealth quintile have net worth averaging nearly \$1.5 million, roughly six times the net worth (about \$250,000) of those in the middle group. The findings are similar for unmarried households, with the average net worth of the highest wealth quintile being approximately \$800,000. Among unmarried households, however, the relative difference between high and middle is even greater than that for married households (i.e., a ratio of about 10 to 1).

While the value in 2002 of homes, IRAs, stocks and bonds, and other assets was exponentially greater in the wealthiest group, the composition, magnitude, and distribution of wealth is in fact broadly similar across age categories. For both married and unmarried participants, net worth is somewhat greater in the 65 to 74 and 85 and older age groups. The value of one's home is the most important component of wealth in a majority of U.S. households. In the lower four wealth quintiles, the value of one's home is greater than any other single component (except among unmarried people in the lowest quintile, for whom home wealth is negative). Net worth in stocks and bonds is greater than savings in targeted retirement plans such as IRAs and 401(k)s, although the latter have become increasingly important over time. Married participants consistently report more retirement-plan wealth than do their unmarried counterparts, although the amounts are quite small or nonexistent among people age 85 and older.

FIG. 3-6

COMPONENTS OF NET HOUSEHOLD WORTH FOR MARRIED RESPONDENTS, BY AGE AND WEALTH QUINTILE: 2002

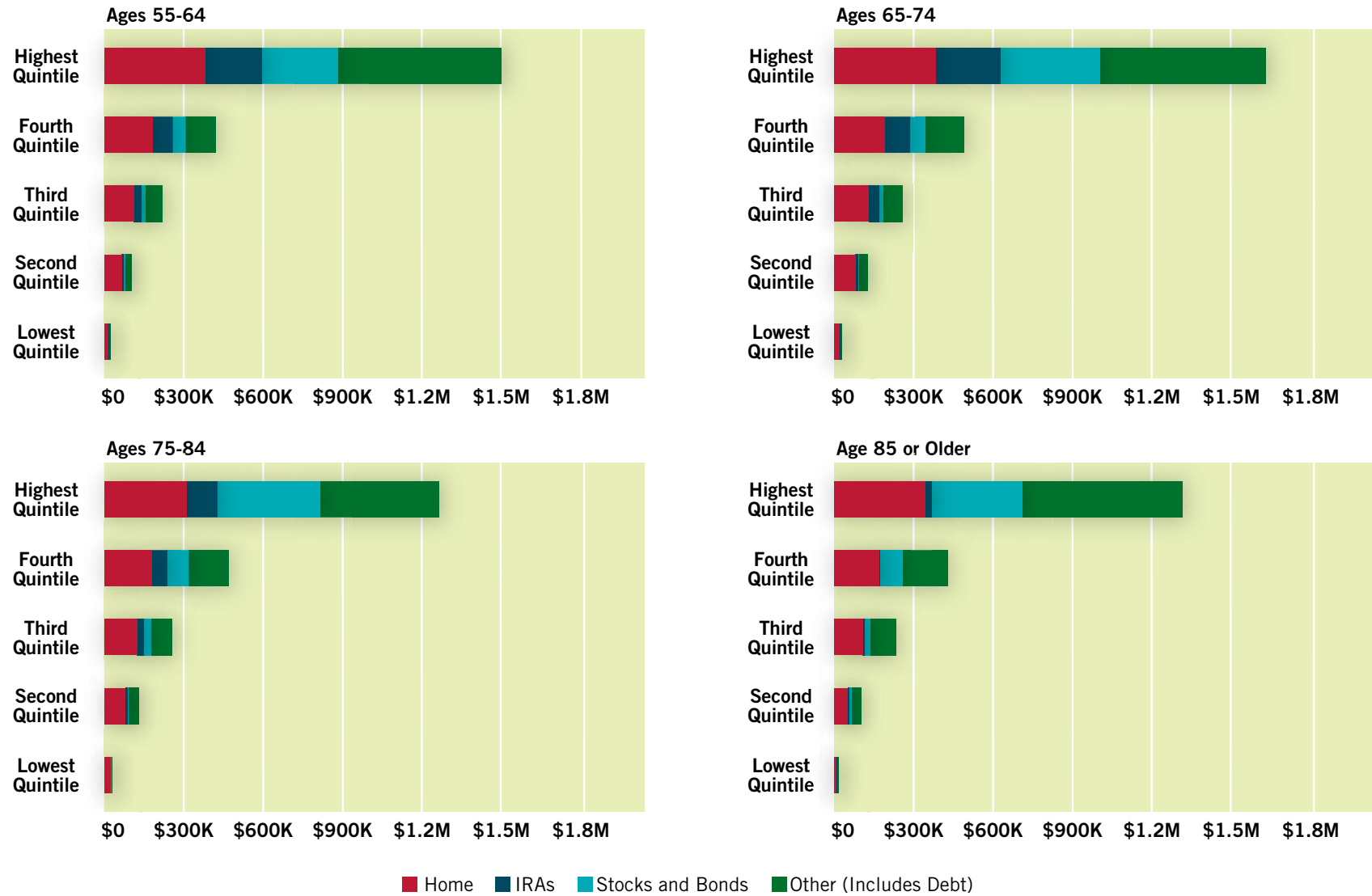


FIG. 3-7
COMPONENTS OF NET HOUSEHOLD WORTH FOR UNMARRIED RESPONDENTS, BY AGE AND WEALTH QUINTILE: 2002



REFINING THE MEASUREMENT OF WEALTH

The data in *Figures 3-6* and *3-7* tell an interesting story but paint an incomplete picture of wealth in the United States. Wealth is a difficult concept to measure completely because a good portion of one's wealth in older age may be in the form of claims to income in the future such as Social Security benefits or pensions. Wealth in the form of cash today can be used to purchase an annuity that will provide future income, but in general it is not possible to "sell" one's claims to Social Security or pension benefits for cash today. Nevertheless, it is analytically useful to put Social Security and pensions on the same footing as cash or mutual funds by computing an equivalent amount of wealth for them. Analysts refer to this wealth equivalent as the present discounted value of future benefits. It is calculated using a discounting formula that takes into account the fact that a dollar 10 years from now is worth less to someone than a dollar today.

Researchers are now using HRS data to devise more comprehensive measures of wealth that include the discounted value of future entitlements. One effort divided household wealth into seven categories: the present discounted value of Social Security benefits, the present discounted value of defined-benefit pensions, the present discounted value of other annuities, the current value of retirement accounts, all other net financial wealth, housing equity,

and all other wealth (Poterba 2004). This study used an innovative methodology to determine the present discounted value of different future entitlements. Social Security wealth was calculated using reported Social Security payments of HRS participants who were receiving Social Security and the expected Social Security payments reported by people who were not yet receiving benefits.

Future payments were then discounted using demographic mortality tables and adjusted using Social Security Administration (SSA)

assumptions about future interest and inflation rates. Other defined-benefit payments were assumed to be fixed in nominal terms and were discounted using the SSA interest rate. Data on defined-contribution plans were collected from a special HRS employment module and included in the "current retirement accounts" category. They included the retirement-plan balances that workers have at their current jobs, plus any balances from previous employers.

By combining these estimates with other categories of wealth, the study estimated average

TBL. 3-2
AVERAGE AND MEDIAN HOUSEHOLD WEALTH, BY WEALTH COMPONENT: 2000

Wealth Component	Average	Median
Social Security	\$160,700	\$159,900
Defined-Benefit Pension	\$136,300	\$0
Other Annuity	\$5,000	\$0
Retirement Accounts	\$94,300	\$4,500
Other Financial Wealth	\$181,600	\$30,000
Housing Equity	\$104,200	\$70,000
Other Wealth	\$129,500	\$15,000
Total	\$811,600	\$454,800*

Notes: The median HRS household has no wealth from a defined-benefit pension or from another type of annuity. Therefore, the median values for these variables are zero.

**Total median household wealth is not the sum of the table rows.*

Source: Poterba 2004.

and median household wealth balances for the year 2000. **Table 3-2** shows amounts for all HRS households combined, although the research also estimated balances for different types of households (e.g., those with and without retired residents, and single-person households). As would be expected with the inclusion of pension wealth, the total average amounts are higher than those using alternate definitions of wealth or net worth (see **Figure 3-10** for example).

Table 3-2 also demonstrates the importance of considering medians instead of means (averages). As noted above, the distribution of wealth is highly skewed. More than half of HRS households in 2000 had neither a defined-benefit pension plan nor wealth in the “other annuity” category. Median amounts for the other five component categories also were lower than the average amounts. Therefore, the median wealth value is substantially less than the average value. Focusing on medians may give a truer and more useful picture of wealth in the aging United States.

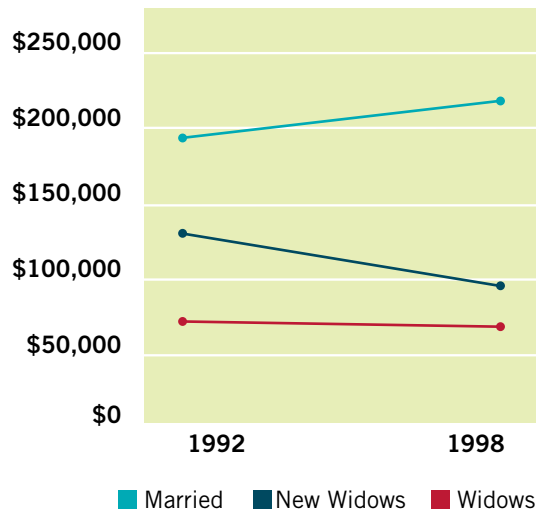
MARRIAGE AND WEALTH

The unique design of the HRS—following both people in a married couple over time—permits examination of changes in marital status over time while estimating the economic, health, and social effects of such changes. As discussed throughout this publication, HRS data show that economic well-being in later life is linked to marital status—that married older couples have higher incomes and greater wealth than those of unmarried individuals. A change in marital status because of death or divorce can dramatically change a person’s financial situation, however, and with the significant rates of divorce, remarriage, and reorganizing of families in recent decades, the HRS provides data on the consequences of changes in family structure.

Women lose more than the companionship of a spouse when they are widowed—their wealth suffers significantly as well. One study focused on the original (1992) cohort of female HRS participants ages 51 to 61, tracking their net worth from 1992 to 1998 (Weir et al. 2002) (**Figure 3-8**). They compared three groups of women: those who were married in 1992 and stayed married through 1998, women who were married in 1992 but became widowed before 1998, and women who were widows in 1992 and stayed unmarried through 1998. The median wealth in 1992 of women who were newly widowed between 1992 and 1998 was lower than that of other married women in 1992, indicating that poorer married couples are more likely to be widowed in the first place. Further, the new widows’ wealth declined both absolutely and relatively over those 6 years. In contrast, women who were widows at the beginning of the HRS and who remained unmarried had constant net worth over time, and women who were married throughout the period saw their household net worth rise.

FIG. 3-8
CHANGES IN WOMEN'S HOUSEHOLD NET WORTH, BY MARITAL STATUS: 1992-1998

(Women ages 51-61 in 1992)

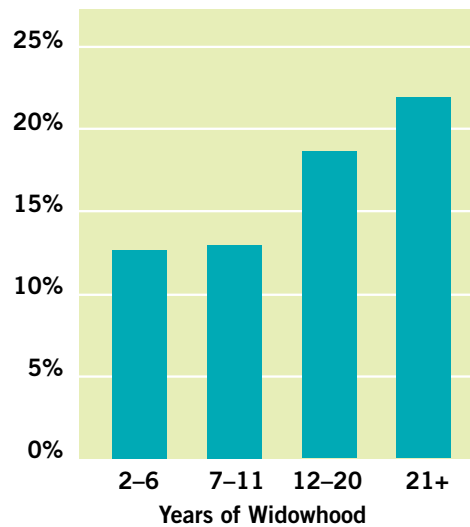


Source: Weir et al. 2002.

The same study used HRS data to investigate the economic consequences of a husband's death for women's poverty rates (Weir et al. 2002). Although the HRS was not designed to collect extensive retrospective data on events prior to a participant's entry into the study, it does include questions about the timing of marriages. From this, researchers calculated for all widows surveyed in 1998 the date at which they most recently became widowed, and thus the length of time they had been widowed. For women widowed 2 or more years, the poverty rate was essentially the same for widowhood durations up to 11 years. However, the poverty rate increased substantially over the course of widowhood, rising to 22 percent for those widowed more than 20 years (**Figure 3-9**).

FIG. 3-9
POVERTY RATE FOR WIDOWS, BY DURATION OF WIDOWHOOD: 1998

(Percent in poverty)



Source: Weir et al. 2002.

Negative economic consequences for people who divorce or separate are even stronger than for those who become widowed, according to another analysis using early HRS results (Wilmoth and Koso 2002). Women's economic status was more influenced by a marital dissolution than was men's, although the differences tended to evaporate among people who remarried. Remarriage appeared to offset the negative impact of a marital dissolution, while cohabiting did not offset the negative impact. Cohabiting people had wealth reductions that were similar to those of their single counterparts.

PENSION WEALTH

With the present shift away from defined-benefit programs toward defined-contribution programs, pension-policy experts are concerned that individuals with greater "control" over their pension assets may choose to spend their assets quickly. In other words, retirees might exhaust lump-sum distributions and/or defined-contribution payouts shortly after retirement, thereby leaving them at financial risk in later years. Two investigations of early HRS results found that this was not a widespread phenomenon. Engelhardt (2001) found little evidence that dipping into pension funds decreased retirement wealth. People who drew on future pensions did so in very modest amounts, while preserving most of their accumulations for retirement. Similarly, Gustman and Steinmeier (2000a) calculated that less than 10 percent of pension wealth was lost because people cashed out their benefits after leaving a pension-covered job.

Both Engelhardt (2001) and Gustman and Steinmeier (2000a) used early HRS data for people ages 51 to 61 in 1992, but cautioned that their findings might change fairly quickly over time. If younger workers' attitudes toward saving and retirement expectations differ from those of today's older workers, the early HRS findings could underestimate the eventual retirement income security of future retirees. Greater access to funds could induce workers to use them for purposes other than those for which pensions are intended. Moreover, the changing nature of pension systems will almost certainly affect retirement planning and behavior.

AGING AND HOUSING EQUITY

Figures 3-6 and **3-7** show that homes are the most important single asset for a large proportion of older Americans. However, researchers interested in the economics of aging want to

understand the extent to which people use housing equity to support their consumption during retirement. People can spend down or consume the equity value of their homes in a number of ways, including through reverse mortgages, refinancing, and home equity loans. One study of HRS data from the 1990s considered two other ways that households can change their home equity: first, by ceasing to own a home at all, and second, by selling one home and moving to a less valuable one (Venti and Wise 2001). The data show that households in general are unlikely to discontinue home ownership, even after the death of a spouse or a family member's move to a nursing home. When a home is sold, it is much more common to buy another rather than discontinue home ownership altogether, and the new home tends to be more expensive than the previous one, thus increasing the value of home equity.

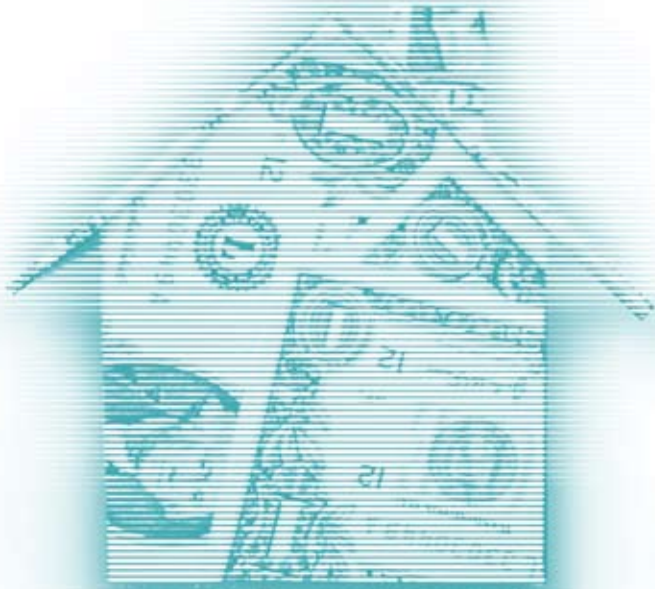
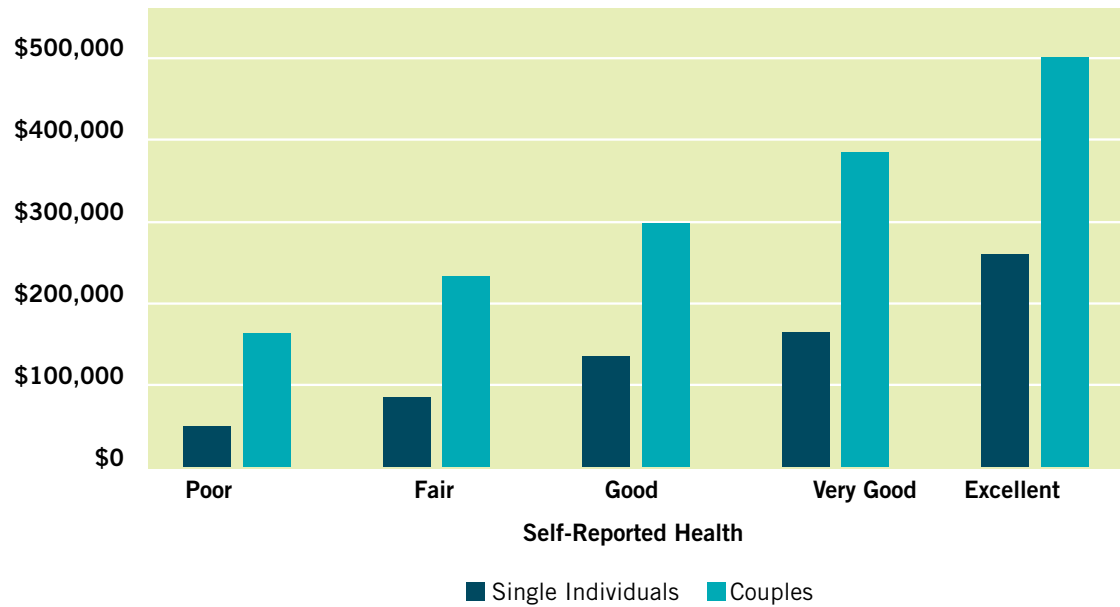


FIG. 3-10
HEALTH AND NET WORTH: 2002
(Mean household net worth in dollars)



There is an age threshold, however, at which the change in housing value shifts direction. HRS data show that in the 1990s, housing equity increased until about age 75 and then declined slightly as household members grew older. For people age 70 and older as a whole, housing equity declined about 1.8 percent per year; most of this decline is accounted for by an 8 percent annual decline among households that experienced a death or major unexpected health event (Walker 2004). Further study of people age 70 and older indicates that the death of a wife is more likely to spur the widower to sell than vice versa. Poor, married homeowners appear to be more likely than their wealthier counterparts to consume their housing wealth.

WEALTH AND HEALTH

An important finding from the HRS is the strong correlation between health and wealth. In 2002, the mean household wealth (using the net worth concept described above) of married couples reporting excellent health was approximately three times that of married couples reporting poor health (an average of \$500,000 compared with \$164,000) (*Figure 3-10*). The relative difference among unmarried HRS participants is even more striking, with average household wealth for those reporting excellent health more than five times greater than for those reporting poor health.

TBL. 3-3
MEAN HOUSEHOLD NET WORTH, BY HEALTH OF HUSBAND AND WIFE: 1992

		Wife's Health				
		Excellent	Very Good	Good	Fair	Poor
Husband's Health	Excellent	\$416,809	\$420,724	\$301,972	\$202,431	\$155,842
	Very Good	\$360,354	\$375,032	\$242,435	\$158,112	\$84,907
	Good	\$341,576	\$243,494	\$195,821	\$154,110	\$86,214
	Fair	\$237,077	\$224,258	\$108,618	\$193,806	\$160,248
	Poor	\$171,877	\$117,314	\$133,053	\$95,302	\$30,995

Source: Willis 1999.

The *joint* health status of husbands and wives also is closely correlated with net worth, as illustrated by data in **Table 3-3** from the initial (1992) wave of the HRS. With a few exceptions, the column and row amounts decline steadily. The joint relationship can be seen by focusing on the diagonal sequence of cells from the upper left of **Table 3-3** (both partners reporting excellent health) to the lower right (both partners reporting poor health). As shown, average household net worth was more than \$400,000 when both partners were in excellent health, compared with \$31,000 when both partners were in poor health. The reasons for this relationship are numerous and intertwined. How wealth and health may influence each other is a topic of ongoing research using new waves of HRS information.

Wealth is also related to the risk of death. One study linking 1992 HRS data to HRS participant deaths between 1992 and 1998 found that greater wealth reduces the risk of death even after controlling for other socioeconomic and demographic factors (Bond Huie et al. 2003).

UNEXPECTED HEALTH EVENTS AND WEALTH

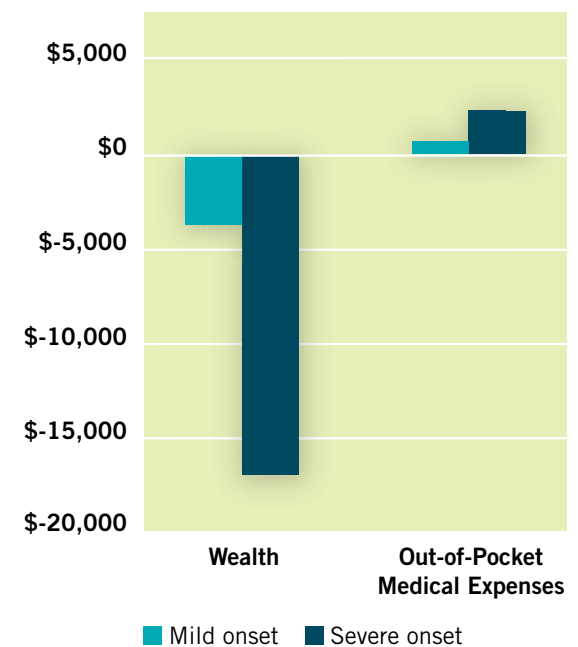
Unexpected health events can greatly increase medical expenses while reducing household wealth (Smith 1999). Among people ages 51 to 60 in the original (1992) HRS cohort who experienced a mild health problem in 1992, total medical expenses between 1992 and 1996 averaged \$2,500, although out-of-pocket medical expenses were less—an average of \$635 (**Figure 3-11**). However, these individuals' wealth declined by more than \$3,600 between 1992 and 1996.

For those experiencing the onset of a severe health condition in 1992, total medical expenses between 1992 and 1996 were much more substantial, averaging almost \$29,000. Less than one-tenth of these expenses—an average of \$2,266—was paid out-of-pocket. During the same time period, the wealth of the same group declined by almost \$17,000—nearly five times the decline for mild health onsets. The researcher estimated that the \$17,000 wealth reduction was approximately 7 percent of

household wealth, but suggested that the eventual impact on wealth may be even greater because health problems can persist over time.

An analysis of gender differences in health and wealth, using HRS data for 1992 through 1998, concluded that unexpected health events may have a greater financial impact for women than for men because women are less likely than men to have public or private disability insurance (Ward-Batts 2001). This study also considered the gender-specific impact of certain disease

FIG. 3-11
IMPACT OF NEW HEALTH PROBLEM IN 1992 ON TOTAL WEALTH AND OUT-OF-POCKET MEDICAL EXPENSES: 1992-1996
(People ages 51-60 in 1992)



Source: Smith 1999.

TBL. 3-4

HEALTH STATUS AND HOUSEHOLD PORTFOLIO DISTRIBUTIONS: DATA FROM THE 1990s

Health Status	Probability of Holding Asset				Proportion Held in Asset Category			
	Safe	Retirement	Bond	Risky	Safe	Retirement	Bond	Risky
Singles					Singles			
Healthy	78	35	5	25	61	23	2	15
Sick	52	11	2	8	78	12	1	9
Married Couples					Married Couples			
Both Healthy	88	53	9	38	50	30	2	19
One Spouse Sick	78	32	4	21	65	21	2	12
Both Spouses Sick	65	21	2	12	75	18	1	7

Notes: A person is “healthy” if she/he reports having excellent, very good, or good health. “Sick” refers to people reporting fair or poor health. Proportions held in asset categories were calculated only for people with positive financial wealth, and may not add to 100 percent due to rounding.

Source: Rosen and Wu 2003, based on the first four waves of the HRS (1992-1998).

onsets, pinpointing diabetes, stroke, and lung disease as having especially negative wealth effects for women.

Health status not only is linked to the amount of wealth, but also may be associated with the composition of household wealth portfolios. A study using HRS data for 1992 to 1998 found that poor health decreases the probability of holding certain types of assets, and that people in poor health tend to have relatively “safe” portfolios compared with those of people in good health (Rosen and Wu 2003). For this study, the researchers specified four categories of assets: “safe assets” (money market funds, checking and savings accounts, CDs, U.S. Treasury bills, and Government savings bonds), retirement accounts

(IRAs and Keogh plans), bonds (corporate, municipal, foreign, and bond funds), and “risky assets” (stocks and mutual funds).

Table 3-4 shows that, for both unmarried and married people, being healthy increases the likelihood of having each of the asset types. For example, 25 percent of healthy unmarried people hold risky assets, compared with only 8 percent of sick unmarried people (i.e., those reporting fair or poor health). Thirty-eight percent of married couples in good health hold risky assets, with the proportion declining to 21 percent if one spouse reports fair or poor health to 12 percent if both spouses report fair or poor health. **Table 3-4** also shows that health status is related to the proportion of wealth in each asset category. Unmarried

sick people have 78 percent of their wealth in safe assets, whereas healthy single people have 61 percent of their wealth in safe assets. Couples with both spouses sick hold three-quarters of their assets in safe instruments, compared with half for healthy couples.



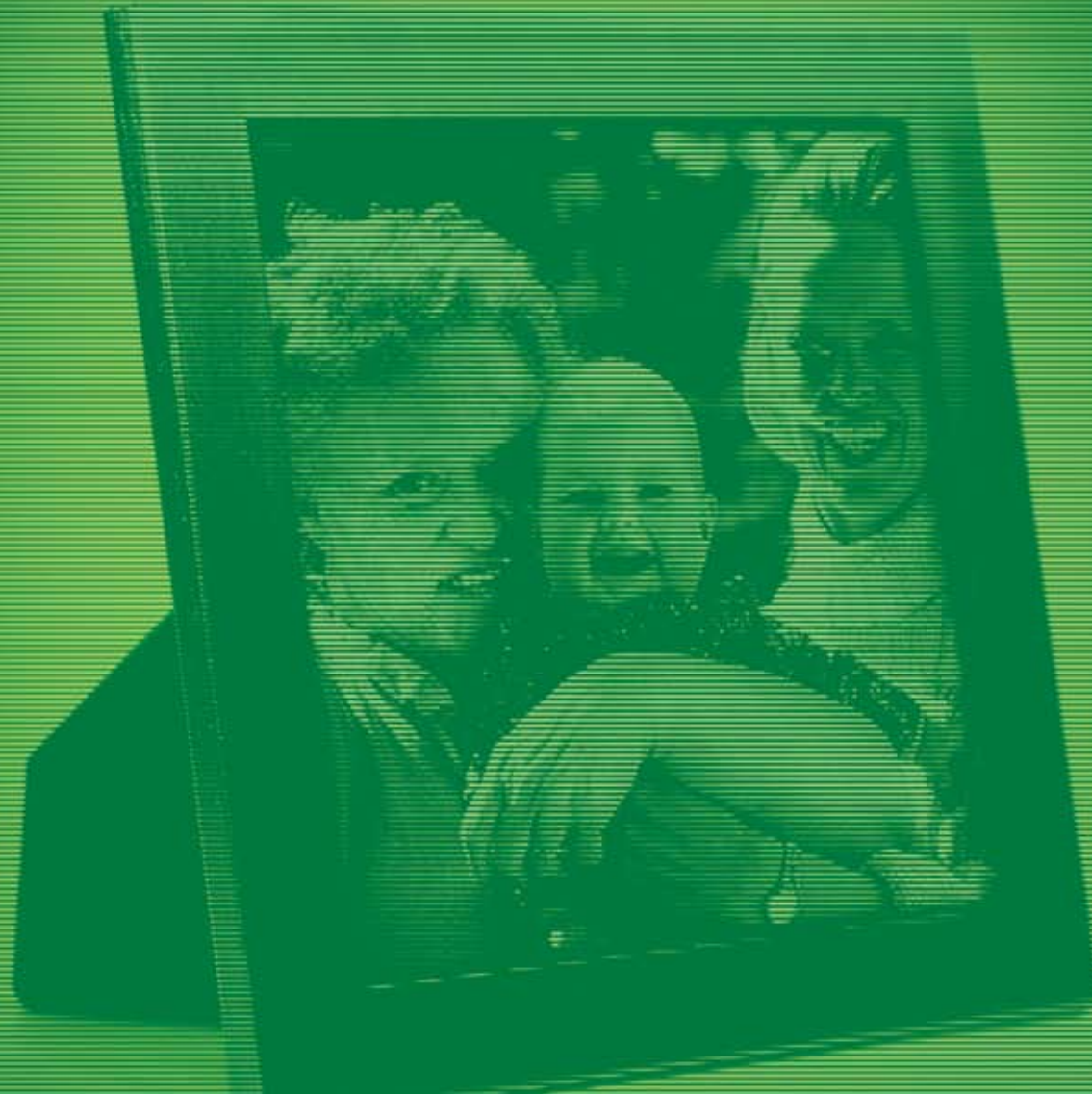
PROBABILISTIC THINKING AND FINANCIAL BEHAVIOR

A major policy debate in recent years has centered around expanding the scope of individual choice with regard to financial decision making. In this context, researchers and policy planners have become increasingly interested in knowing how well older Americans will adapt to trends in both the private and public sectors. The HRS poses to participants a large number of subjective probability questions which, in one sense, can be considered to be a large psychometric test of probabilistic thinking among more than 20,000 individuals. Thus, for the first time, researchers can provide empirical evidence about the relationship between probabilistic thinking and financial behavior for a nationally representative sample of households.

One pioneering analysis constructed a measure of preciseness in probabilistic answers and related this to the likelihood of holding risky household assets and to the rate of growth of household net worth (Lillard and Willis 2001). Two results emerged: First, there was a wide range in the precision of probabilistic thinking throughout the population, and second, more precise probabilistic thinking led people to be willing to take more risks and to enjoy greater increases in wealth. At first blush, such a finding might be used to justify fears about expanding the scope for choice through IRAs, because significant portions of the population will be unable to exploit the benefits of choice. However, the study authors hasten to point out that this is a preliminary finding, and that the next step is to explore the degree to which individuals reduce uncertainty through experience with financial management (and therefore become better able to manage their own affairs to their benefit).

For further information about subjective expectations, see page 36.

FAMILY CHARACTERISTICS & INTERGENERATIONAL TRANSFERS



CHAPTER 4: FAMILY CHARACTERISTICS & INTERGENERATIONAL TRANSFERS

Families are important. Family background shapes health and economic outcomes throughout life. In our modern society, families are still the central organizing unit for economic support and for providing care for those physically unable to care for themselves. Understanding families, and how individuals and families change with age, has been a central concern behind the design of the Health and Retirement Study.

The HRS provides uniquely detailed data on sharing, or “transfers,” of time and help, money, and dwellings across generations within families. These data permit analysts to examine how family needs and obligations affect health and retirement decisions and the well-being of Americans as they age. In the long run, the HRS data will be important for determining the extent to which financial transfers to relatives boost or curtail savings for retirement, the links between parental support to children and future assistance from those children, and the links between help from children and the transfer of assets through bequests.

Family structure has been an important area of interest for researchers examining data gathered through the HRS. Much of this work to date pertains to the role in life that people assume (e.g., whether one is married, has children, or cares for grandchildren), although some studies have dealt with transitions between roles, such as from marriage to widowhood. Other studies have considered links between family structure and living arrangements (e.g., the effects of family structure on the probability of nursing home admission), family and health, and the family and economic realms.

This chapter summarizes some of the research that has used HRS data to study family characteristics and intergenerational transfers. Topics discussed include HRS participants’ living situations; the relationships of living arrangements, marriage, and childlessness to health; the impact of multiple life roles on well-being; bequests; and the extent of intergenerational sharing of time, money, and co-residence.

CHAPTER HIGHLIGHTS

The HRS tells us that people over 50 are not generally dependent on their families. Rather, on average, they provide significant economic help to their children and grandchildren. The HRS tells us that:

- **Most older Americans live in homes they own.** Some 79 percent of HRS participants live in a dwelling that they or their spouse own. The rate of home ownership declines with age, but more than half of people age 85 and older still live in their own homes.
- **Many older adults live with or close to one of their children.** While only 11 percent of HRS participants have a child living with them, an additional 51 percent of older households say that they have at least one child living within 10 miles.
- **There is an association between family status and well-being.** Marriage, in particular, is associated with better economic status, fewer self-reported symptoms of depression, and health advantages across a broad spectrum of chronic disease conditions, functional problems, and disabilities. Marital disruption results in substantial loss of both income and assets, especially for minorities.
- **Family help and public programs help keep older people in the community.** The HRS data show that availability of family help, as well as residing in States with strong Medicaid commitments to home- and community-based care, are influential in allowing a family member to stay in the community rather than enter a nursing home. For those over age 70 with disabilities, receiving personal care all or some of the time from a child reduces the chances of receiving care in a nursing home by 60 percent.
- **There are enormous economic costs of providing informal caregiving to people with chronic health conditions.** Analyses suggest that devoting time to informal care of older parents may be incompatible with having a full-time job in middle age.
- **Parents do not support their children equally.** A child’s financial situation, age, marital status,

number of children, home ownership status, proximity, and level of education affect parents' decisions about whether to give money to their children and how much to give.

■ **The value of informal care provided to people with dementia and chronic illnesses amounts to billions of dollars annually.** The yearly costs of informal care by family and friends for dementia is estimated to be \$18 billion. Added to the costs of informal care for diabetes, incontinence, stroke, and depression, the figure rises to nearly \$60 billion. These costs need to be added to the other costs of disease, including the medical costs, personal care provided outside of the family, and loss of income for wage earners who are ill.

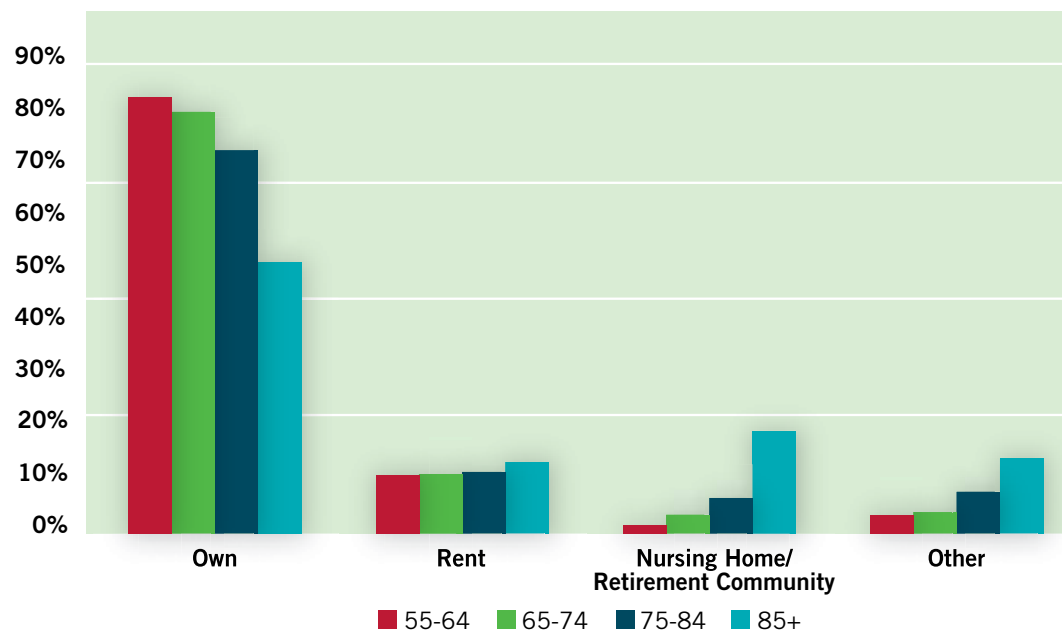
LIVING SITUATIONS

In 2002, a large majority of HRS participants (79 percent) lived in a dwelling that they owned. Although the rate of home ownership declined with age (*Figure 4-1*), more than half of people age 85 and older resided in homes they owned. One in eight HRS participants lived in rental housing. The proportion of people living in nursing homes or assisted living facilities was very low among those ages 55 to 74, rising to 7 percent among the 75 to 84 age group and then more steeply to nearly 20 percent among those age 85 and older.

LIVING ARRANGEMENTS AND HEALTH

HRS data have been used to probe the links between living arrangements and measures of physical, cognitive, and emotional well-being in late midlife. Married couples living alone or with children have been shown to have the highest levels of functioning, whereas single adults living in "complex" households (e.g., unmarried people

FIG. 4-1
LIVING SITUATION, BY AGE: 2002



Note: "Other" includes living rent-free with a relative, and a small number of respondents in miscellaneous living arrangements.

living with others) have the lowest levels of functioning. Relative functional deficits for those living in complex households were reduced, but not eliminated, when demographic characteristics and household resources and demands were taken into account (Waite and Hughes 1999; Hughes and Waite 2002).

Figure 4-2 shows proportions of HRS participants with different combinations of living close relatives. In 2002, about 45 percent of participants ages 55 to 64 had a partner, parent or parent-in-law, and at least one child who was living. This percentage dropped sharply in the older age groups. Nearly 70 percent of the youngest

participants had both a partner and child(ren) who were living. Among participants age 85 and older, less than one-fifth had both a partner and child(ren). The percentage of people with at least one living child was high and fairly consistent across age groups. *Figure 4-2* appears to indicate declining numbers of close living family members as age increases, but it should be noted that the loss of parents and spouses is often numerically compensated by children and grandchildren. Nevertheless, a substantial proportion of single men are childless; as they age, these men may have only their own resources and public programs to rely on for financial and other support.

FAMILY STATUS AND PSYCHOLOGICAL WELL-BEING

Marital status has clear effects on the mental health of older people. A comparison of married and unmarried HRS participants of all ages found that married women were less likely than their unmarried counterparts to report symptoms of depression, and that the mental health benefits of marriage were even greater for men than for women (Earle et al. 1998).

Turvey et al. (1999) found a strong association between the loss of a spouse and both syndromal depression and depressive symptoms among

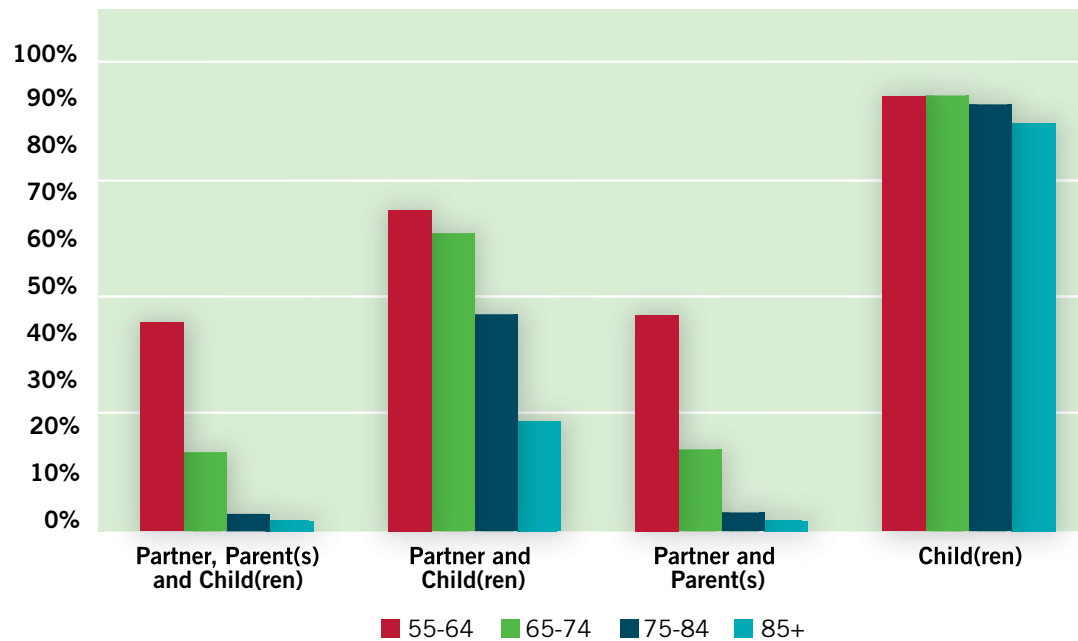
adults age 70 and older. Controlling for pre-loss depressive symptoms, the researchers found that the rate of syndromal depression among people who were newly bereaved was nearly nine times as high, and the rate of depressive symptoms was nearly four times as high, as the rates for married individuals. Some widows and widowers experienced high levels of depressive symptoms up to 2 years after the loss of their spouses. Neither demographic variables nor variables concerning the nature of the spouse's death predicted the level of bereavement-related depression.

Another study brought a “couples perspective” to the analysis of depressive symptoms in middle-aged

and older adults. Townsend et al. (2001) found that husbands' and wives' depressive symptoms were moderately correlated, with the symptom level of one spouse explaining approximately one-fourth of the variance in the other spouse's level. The study also found that net worth was an independent predictor of depressive symptoms after controlling for income and other factors.

A study using AHEAD data focused further attention on the possible additional negative effects of childlessness on psychological well-being (Zhang and Hayward 2001). Two dimensions of well-being—loneliness and depression—were considered, and the findings identified prominent gender differences. Divorced, widowed, and never-married childless men had significantly higher rates of loneliness compared with women in similar circumstances. Divorced and widowed childless men also had significantly higher rates of depression than their female counterparts. Given that men, who are much more likely to be married than women at older ages, generally show lower rates of depression than women, these findings warrant additional analyses to provide insights into the role of family connections in the mental well-being of men and women.

FIG. 4-2
LIVING CLOSE RELATIVES, BY AGE OF RESPONDENT: 2002



Note: Parents include parents-in-law.

MARITAL STATUS AND PHYSICAL WELL-BEING

HRS data have also been used to evaluate the relationship between marital status and major chronic illnesses, functional limitations, and disability. Findings from one study (Pienta et al. 2000) suggest that marriage conveys health advantages across a broad spectrum of chronic disease conditions, functional problems, and disabilities, and that these advantages are widely shared across demographic groups (men and women, Whites and Blacks, and groups defined by duration of marriage). A limitation of this

cross-sectional analysis was the inability to assess whether the observed correlation of marriage and good health occurs because marriage itself promotes health, or whether the healthy are more likely to be married (or remarried). With HRS longitudinal data on health and marriage, it will be possible to distinguish between these explanations.

MARITAL STATUS AND WEALTH

Chapter 3 describes the relationship between current marital status and wealth. Retrospective first-wave data also have documented links between marital histories and economic well-being (Holden and Kuo 1996). In more than one-third of all married-couple households in 1992, at least one spouse had a previous marriage that ended in divorce or widowhood. These respondents who had experienced divorce or widowhood had significantly lower incomes and fewer assets than did couples in first marriages. The researchers found that widows and couples in which the prior marriage of one spouse had ended in widowhood were no better off economically than their divorced peers. Also, women and Blacks in the original 1992 HRS cohort (ages 51 to 61) had spent a higher percentage of their lifetimes outside of marriage than had men and Whites. The study raises important questions about the long-term economic consequences of past marital dissolution.

In a related vein, Angel et al. (2003) used five waves of the HRS to assess the economic consequences of marital disruption for pre-retirement-age women. Prior research has shown that a woman's financial situation in later life is determined by her marital and work history. HRS women who were age 51 or older in 1992 grew up during a period when female employment rates and rates of marital disruption both increased substantially. For HRS women generally,

marital disruption results in a substantial loss of both income and assets. The economic consequences are greatest for Black and Hispanic women, who have lower household incomes and fewer assets even when married.

MULTIPLE FAMILY ROLES AND WELL-BEING

While family connections enhance well-being in many ways, the burden of family roles can also be a strain, especially when one person takes on multiple roles. Several researchers have examined the link between performing multiple family roles and well-being. One study using 1992 data evaluated depressive symptoms associated with the roles of wife, mother, paid worker, and informal caregiver for women (Reid and Hardy 1999). The study also assessed role demands and satisfaction. Although the number of roles was linked with depressive symptoms, the number had no

significant effect after controlling for role demand and satisfaction. In other words, role quality, not role occupancy per se, is linked with psychological well-being.

Another study brought a racial perspective to the analysis of multiple-role participation and depressive symptoms (Cochran et al. 1999). Among women ages 55 to 61, Blacks were less likely than White women to be married and employed, and more likely to be grandmothers and caregivers. Older Black women reported significantly more depressive symptoms than did White women, and employment was found to have a more powerful influence on diminishing depressive symptoms for Black women than for White women. The research also suggested that in the absence of a spouse and/or employment, Black women who are caregivers and grandmothers may be more likely to face economic hardship that increases the likelihood of depressive symptoms.



TBL. 4-1

DISTRIBUTION OF EXPECTED BEQUESTS, BY PARENT COHORT AND SELECTED WEALTH PERCENTILE*(Dollars per child)*

Percentile	Parent Cohort (Years of Birth)			
	1923 or Earlier	1924-1930	1931-1941	1942-1947
10 th	0	0	0	0
25 th	\$1,000	\$1,000	\$2,000	\$3,000
50 th	\$8,000	\$8,000	\$12,000	\$19,000
75 th	\$37,000	\$42,000	\$52,000	\$65,000
90 th	\$111,000	\$111,000	\$134,000	\$187,000
95 th	\$191,000	\$195,000	\$237,000	\$382,000
Average Number of Children in Family	2.8	3.2	3.3	2.6
Average Inheritance Per Child	\$47,000	\$45,000	\$70,000	\$86,000

*Source: Smith and Hurd 2002.***AMOUNT OF BEQUESTS**

There is considerable controversy about the current and future importance of bequests in our society. Some argue that baby boomers are likely to receive large estates from their parents who have had relatively high lifetime incomes and have benefited from stock market gains. Others argue that the role of bequests in strengthening intergenerational relationships and contributing to future well-being of kin has been overstated.

In order to understand the role of bequests, the HRS acquires two distinct types of information about them. From living respondents, it asks whether they themselves have received bequests, as well as their expectations to receive them in the future and to leave them to their own heirs. Following the death of a respondent, a special

interview is conducted with a knowledgeable proxy (often a surviving spouse or child) to obtain information about the last years of life and about the distribution of the estate. Thus, in a longitudinal setting, it becomes possible over time to see how well plans and expectations are carried out after death.

To develop a new method for estimating the magnitude of future bequests, a group of researchers (Smith and Hurd 2002) combined HRS data on current wealth and self-reported probabilities of bequests with actual bequests (from proxy interviews for a sample of HRS participants who died between 1992 and 1998). The researchers were especially interested to learn whether expected bequests differed greatly across cohorts, if bequests were distributed evenly among children, and the extent to which older households spend

(or “dissave”) in order to finance their own consumption in older age.

The study resulted in three major conclusions. First, the distribution of bequests, like the distribution of wealth, is highly skewed. The typical baby boom child of an older HRS respondent can expect only a modest inheritance, and approximately 20 percent will not receive any bequest from their parents. The median bequest that children of HRS participants in the oldest cohort (born in 1923 or earlier) are likely to receive is about \$8,000, while the median bequest that children of HRS participants born between 1942 and 1947 can expect to receive is \$19,200.

Second, there is considerable inequality in the estimates of expected bequests. **Table 4-1** shows expected bequests from four different parent cohorts according to selected wealth percentiles. Among parents who were born between 1942 and 1947, those in the 10th percentile of wealth do not expect to leave any bequests to their children. Parents in the 25th percentile will leave relatively small bequests of approximately \$3,000 per child. Parents in the 90th percentile, however, will leave \$187,000 per child, and those in the 95th percentile will bequeath more than twice that amount (\$382,000). The distribution of bequests reflects the highly skewed distribution of wealth mentioned in Chapter 3, as well as the tendency of the wealthy to have fewer children than those with lower wealth levels.

Third, the study found very minor differences in the size of expected bequests for the two oldest parent cohorts (those born in 1930 or earlier), but an increasing magnitude of expected bequests among younger parent cohorts.

Based on proxy interviews about deceased HRS participants, the study also discovered that about 90 percent of financial inheritances are bequeathed to immediate family members. In

multiple-child families, four out of five parents give equal inheritances to each child if there is no surviving spouse. Finally, the study found clear evidence that people in HRS households intend to spend a large portion of their savings during older age. On average, households of participants ages 70 to 74 will likely spend more than 60 percent of their current assets, leaving the remainder as bequests.

PATTERNS OF INTERGENERATIONAL TRANSFERS

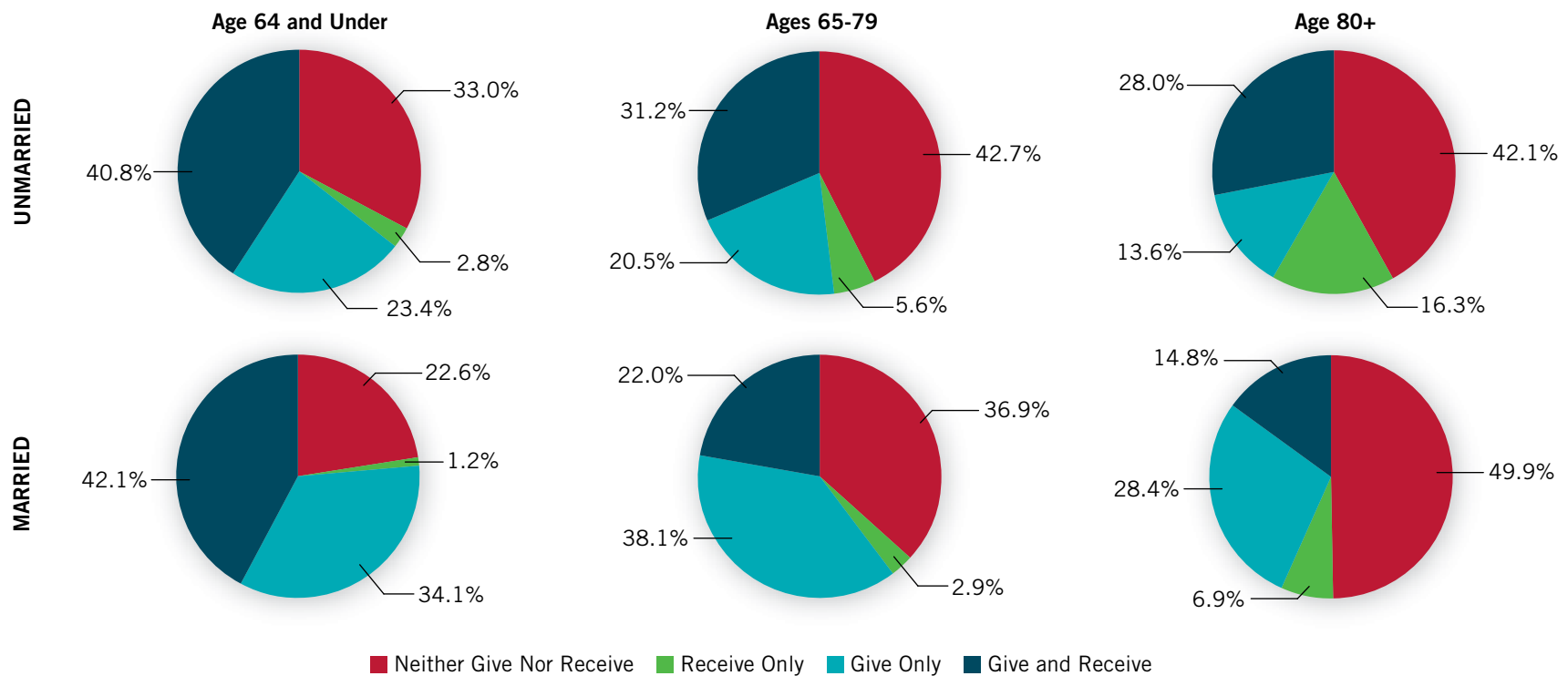
Intergenerational sharing, or transfers, can be grouped into three main categories: time, money, and co-residence. **Figure 4-3** presents the overall pattern of transfers between HRS parents (unmarried versus married) and their children in 2002, that is, whether there are any exchanges

and, if so, in which direction they flow. Sizable proportions of HRS parents—about one-third of married and 40 percent of unmarried participants—neither give nor receive time, money or co-residence. Married parents, especially those over age 64, are more likely to give but not receive transfers.

FIG. 4-3

TRANSFERS TO/FROM PARENTS AND THEIR CHILDREN, BY AGE AND MARITAL STATUS OF PARENT: 2002

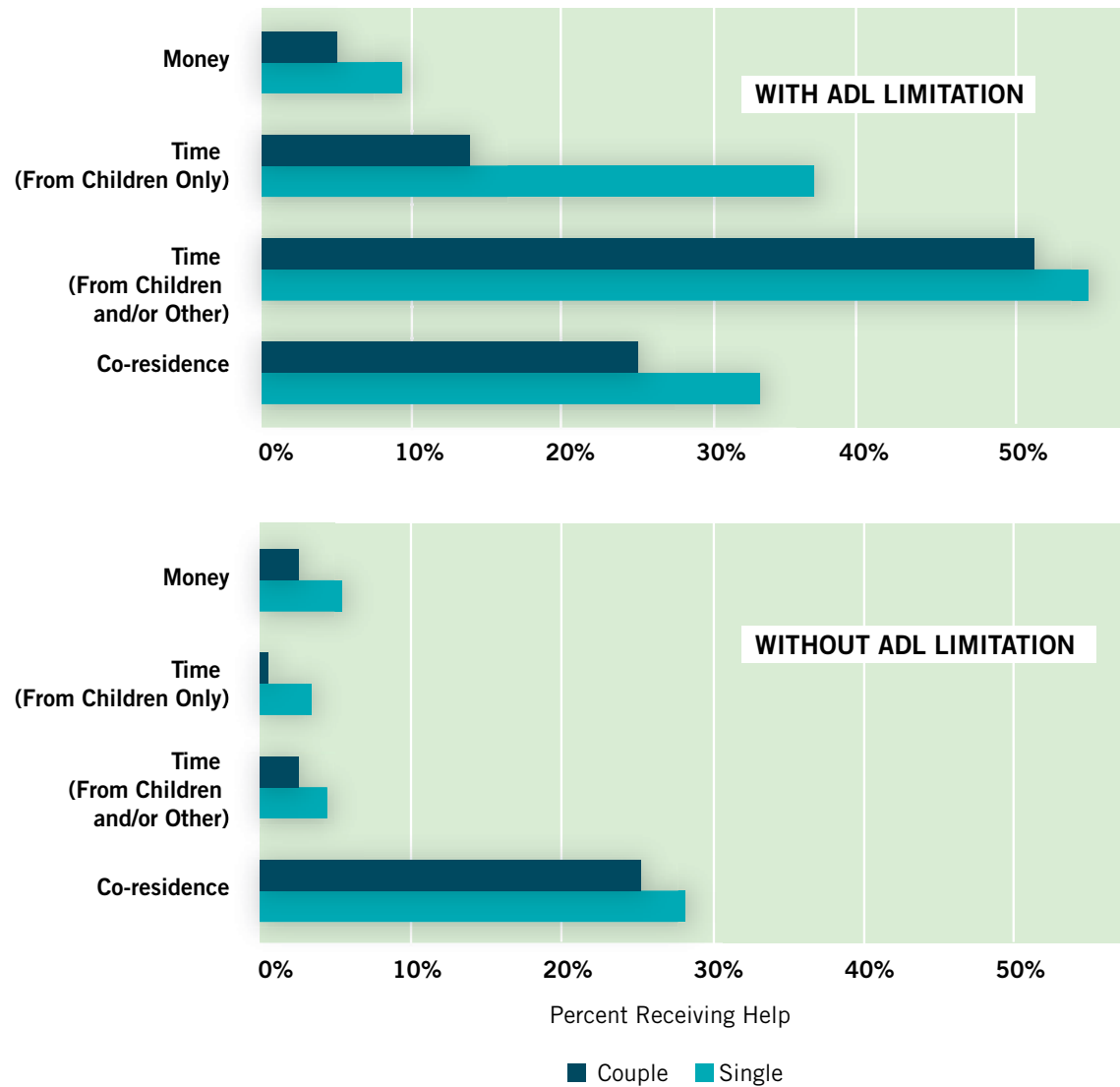
(Transfers include time, money, and co-residence)



Note: Data may not sum to 100% due to rounding.

FIG. 4-4

RECEIPT OF MONEY, TIME, AND CO-RESIDENCE, FOR RESPONDENTS WITH AND WITHOUT ADL LIMITATION: 2002



Notes: "Other" includes grandchildren, spouse if married, and paid home help. Co-residence may be with a child or another person. ADL limitation refers to problems with one or more activities of daily living.

Transfers of Time and Help

One would expect that disability among HRS participants would correlate with assistance from their children. **Figure 4-4** contrasts intergenerational transfers from adult children to their parents who have activity of daily living (ADL) limitations (i.e., disability) with transfers to non-limited parents. In 2002, regardless of ADL limitations, single HRS participants were more likely than married parents to receive help from their children across all transfer dimensions. Parents with ADL limitations were somewhat more likely than non-limited parents to receive money from a child, but this form of transfer was uncommon.

Transfers of time were much more important to disabled parents. Households in which a parent had an ADL limitation were 10 times more likely than non-limited households to receive help (i.e., time) from their children, and even more so when grandchildren, other relatives, and paid home help were factored in. Roughly 4 in 10 unmarried parents with ADL limitations, compared with 1 in 7 married parents with ADL limitations, received time help from a child. When assistance from others was added to that from children, more than half of unmarried and married people received help in the form of time.

A natural follow-on issue relates to the effectiveness of assistance that children provide. HRS data from the mid-1990s indicate that the receipt of regular ADL assistance from children significantly reduced the likelihood of a parent having to enter a nursing home (Lo Sasso and Johnson 2002). Disabled individuals age 70 and older were 60 percent less likely to experience nursing home care if they received help from a child in the form of basic personal care all or most of the time, compared with those who did not receive such help.

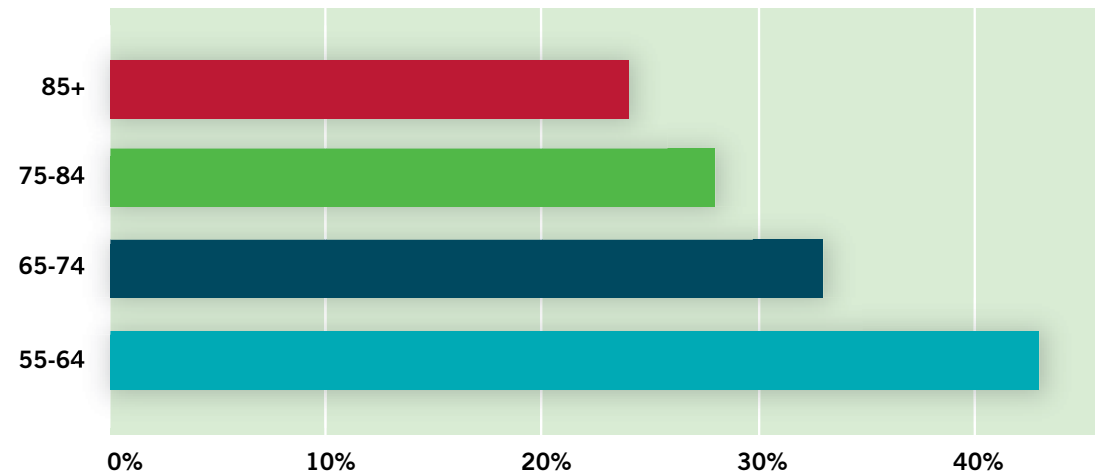
Disability and care are not static, as the ability to provide care and the need for care change often. Freedman et al. (2004) used data for unmarried participants age 70 and older to examine how care requirements change over time. The study found that both paid and unpaid care hours received by older, unmarried, community-dwelling participants increased during the 1990s. However, trends in care hours differed according to shifts in ADLs versus instrumental activities of daily living (IADLs). Responses to ADL changes were fairly symmetric, in that care hours increased as disability worsened and decreased as people recovered function. With IADLs, both paid and unpaid care hours increased with the number of IADL limitations, but paid hours (and, to a lesser extent, unpaid care hours) did *not* decrease as IADLs improved.

Another factor in the care equation is the policy and service environment surrounding the provision of long-term care. The Federal–State Medicaid program funds the largest share of formal long-term care services, but individual States determine their own eligibility criteria, payment levels, and other program characteristics. One examination of HRS results suggested that in States with strong commitments to home- and community-based services, older adults who needed help with one or more ADLs were more likely to receive services that allowed them to remain in the community rather than entering nursing homes (Muramatsu et al. 2004). Therefore, the researchers concluded, although family resources and caregiving are still paramount in determining long-term care use, the effect of these resources on nursing home admission depends on the long-term care context of one’s State of residence.

Transfers of Money

Research using HRS data has shown that a child’s financial situation affects parents’ decisions about

FIG. 4-5
HOUSEHOLDS THAT GAVE AT LEAST \$500 TO THEIR CHILD(REN) BETWEEN 2000 AND 2002, BY AGE OF RESPONDENT
(In percent)



Note: Age for households with couples is based on the man’s age.

whether or not to give money to their children—and how much to give. In 2002, participants were asked if they had given \$500 or more to any of their children during the prior two years. More than one-third (36 percent) of participants said they had. The likelihood of giving money to children decreases as the age of parents increases (**Figure 4-5**); 43 percent of parents ages 55 to 64, compared with 24 percent of parents age 85 and older, provided such financial support.

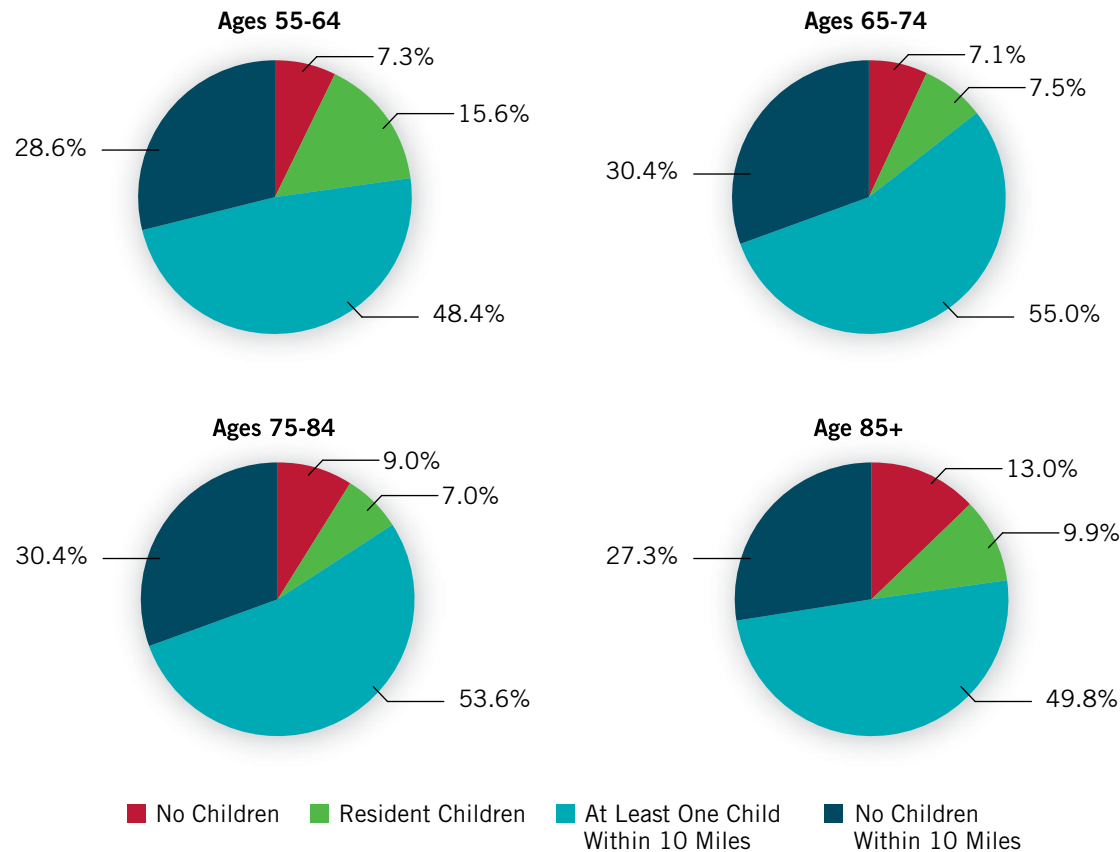
The amount parents give to their children varies by the children’s financial situations. Analysis of data for participants age 70 and older indicated that parents were more likely to give money to children in lower versus higher income brackets (McGarry and Schoeni 1997). Adult children in the lowest income category were 50 percent

more likely to receive a financial transfer from their parents, and on average received \$300 more than their siblings who were in the highest income categories. The researchers also found other factors that influenced parents’ decisions: parents were more likely to give to younger children than older children; less likely to give money to children who were married, had children of their own, or owned their own homes; and more likely to give to children who lived within 10 miles of their parents or who had less education.

Housing Transfers

Geographic proximity of older parents to adult children is related to opportunities for intergenerational transfers. In 2002, 11 percent of HRS participants’ households included a resident child

FIG. 4-6
PROXIMITY TO CHILDREN, BY AGE OF RESPONDENT: 2002



Note: Data may not sum to 100% due to rounding.

of the participant, and 51 percent of households had at least one child living within 10 miles. **Figure 4-6** shows fairly small differences by age of HRS participant. There is an increase with age in the percent without living children, and a notable decline in the proportion with resident children at ages 65 to 74 compared with ages 55 to 64.

RECIPROCITY AND INTERGENERATIONAL TRANSFERS

Intergenerational transfers and help from children are related because families engage in a web of transfers that encourage reciprocity. Sociologists and economists who have examined this issue

hypothesize that past assistance to family members encourages immediate or future repayment of assistance. Henretta et al. (1997) examined this issue among unmarried HRS participants with a need for personal care and more than one child. They found a substantial relationship between financial help from a parent to a particular child and later help from that child to the parent. Among children who received large money gifts from a parent in the past, nearly 50 percent were providing financial help to the parent, compared with slightly more than one-fourth of their siblings who had not received gifts. These findings are consistent with the reciprocity hypothesis.

PARTICIPANTS' TRANSFERS TO PARENTS

Transfers flow not only to and from HRS participants and their children and grandchildren, but also in many cases, from the participants to their own parents. **Table 4-2** presents the pattern of such transfers from HRS participants under the age of 80. In 2002, nearly 7 in 10 HRS participants under age 65 with living parents gave no assistance in the form of money or help with care or chores to their parents. Fifteen percent of HRS participants under age 65 helped their parents with chores only, and about 11 percent made monetary transfers (either only money or money in conjunction with other forms of assistance). HRS participants age 65 and older were slightly less likely than younger participants to provide most forms of assistance to their parents, and three-fourths of the older participants provided no assistance to their very old parents.

TRADE-OFFS BETWEEN EMPLOYMENT AND CARE

The family traditionally has been the leading source of care for its older members, but as

TBL. 4-2

TYPE OF RESPONDENT TRANSFERS TO PARENTS, BY AGE OF RESPONDENT: 2002

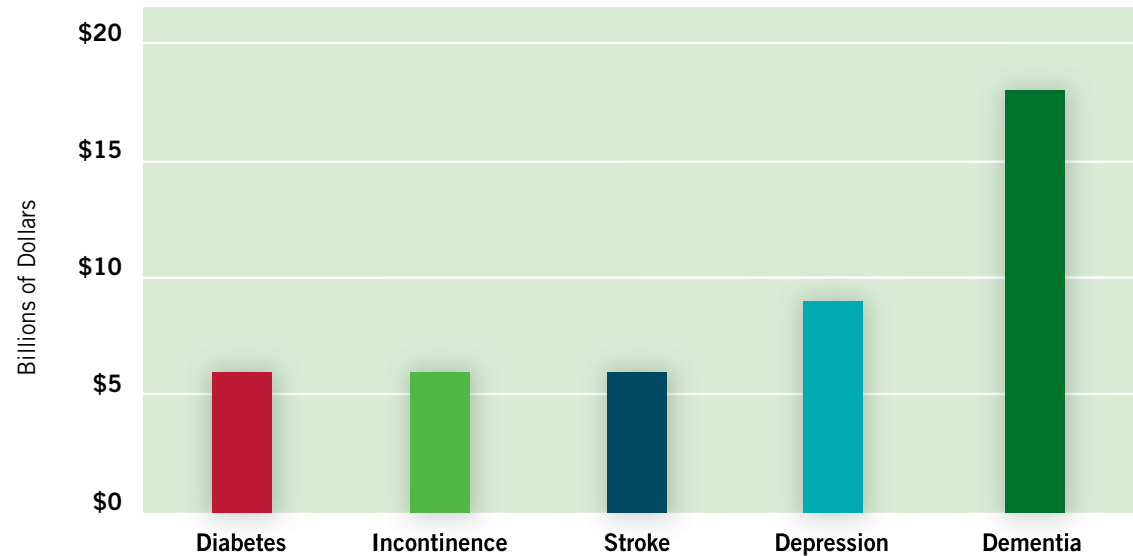
(In percent)

Type of Assistance	Age of Respondent	
	Under 65	65-79
Money Only	5.9%	4.6%
Hour of Care Only	1.5	1.9
Chore Hours Only	14.6	12.0
Care and Chores	3.8	3.1
Money and Care	0.5	0.9
Money and Chores	2.9	1.9
Money, Care, and Chores	1.7	1.4
No Transfer	69.3	74.2

fertility rates decline and more women participate in the formal labor market, we might anticipate greater tension between workforce demands and parental care needs. Analyses of HRS data from the mid-1990s suggest that devoting time to informal care of older parents may indeed be incompatible with having a full-time job during midlife (Johnson and Lo Sasso 2000, 2001). The studies found that women who provided an average of 2 or more hours per week of parental help (with either ADLs or IADLs) worked 43 percent fewer hours than women overall. For men providing similar care, the reduction in hours of paid work was about 28 percent. Women ages 53 to 63 who helped their parents with personal care reduced their hours of paid work by about 70 percent. These findings suggest the need for further research to look at family responsibilities as a major obstacle to encouraging workers to delay retirement, as well as the need to develop accurate estimates of the financial costs incurred by families who provide informal care.

FIG. 4-7

NATIONAL ANNUAL COST OF INFORMAL CAREGIVING FOR FIVE CHRONIC CONDITIONS: CIRCA 1998



Source: Langa and colleagues, various reports 2000-2004.

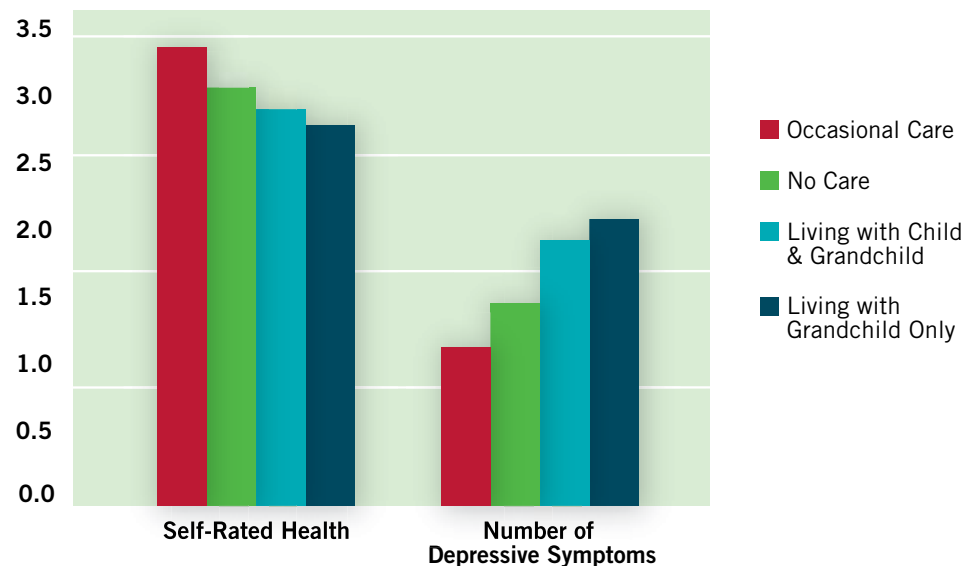
CAREGIVING COSTS, INSURANCE

Medical and workforce costs associated with certain diseases were discussed in Chapters 1 and 2. HRS data may also be used to generate national estimates of the costs of informal caregiving (by family and friends) to people with chronic health conditions. **Figure 4-7** shows one set of estimates for five different conditions, four of which cost at least \$6 billion annually and one of which—dementia—costs \$18 billion annually in informal caregiving.

Looking at people age 70 and older in the 1990s, researchers found that those with mild dementia received 8.5 more hours of care per week and those with severe dementia received 41.5 more

hours of care per week than that received by elders with normal cognitive function (Langa et al. 2001). To estimate the yearly costs of caring for older family members with dementia, the researchers adjusted the number of hours of reported care to account for chronic health conditions other than dementia (and for other factors). They then multiplied the results by the 1998 national average wage for a home health aide of \$8.20 per hour, and estimated that the yearly cost for dementia at the national level was \$18 billion for informal caregiving alone, in addition to direct and indirect costs of dementia in the United States. This finding underscores the importance of including valid estimates of unpaid caregiver time when evaluating future clinical and

FIG. 4-8

GRANDPARENT HEALTH, BY LEVEL OF CARE PROVISION TO GRANDCHILDREN: 1998-2002

Notes: Self-rated health is assessed on a 5-point scale ranging from excellent (5) to poor (0). Data refer to persons who made the transition to a type of care between 1998 and 2000 and/or between 2000 and 2002.

Source: Hughes et al. 2004.

policy interventions aimed at reducing the impact of dementia on individuals, families, and society.

The main alternative to informal family-based care is paid care either in the home or in a nursing home. Long-term care insurance can help cover such costs, but it is purchased by relatively few older adults. One question that arises is whether or not the expectation of care from children is a factor reducing the demand for long-term care insurance. One study using HRS data found that expectations about future caregiver availability in the form of family and friends had no significant effect on ownership of long-term care insurance (Mellor 2001).

GRANDPARENTS' CARE OF GRANDCHILDREN

Descriptive studies from several datasets have indicated the growing importance of the grandparent-grandchild care relationship. However, few surveys are large enough to explore this relationship in any detail. Early HRS results showed that roughly two-thirds of participants had grandchildren, and that 40 percent of these grandparents provided 100 or more hours of grandchild care per year. Women were about 2.5 times more likely than men to provide grandchild care, and single grandmothers provided the most help (about 20 hours per week on average).

Hughes et al. (2004) used six waves of HRS data to examine different types of grandparent caregiving and changes in caregiver health. The researchers distinguished between grandparents who provided care to grandchildren who did not live with them and those whose grandchildren lived with them. They determined that grandparents who provided a considerable amount of care to non-resident grandchildren did so because of desire and resources, while grandparents who co-resided with grandchildren often did so because some family crisis had made this a necessity. The study found that co-residence with grandparents is relatively uncommon. In 1998, for example, only 5 percent of HRS participants lived with grandchildren, mostly in three-generation households.

HRS data consistently show that grandparents who provide little if any direct care to their grandchildren are in better health than those who do provide care, especially compared with those who live with their grandchildren. This relationship holds true for both self-rated health and number of depressive symptoms (**Figure 4-8**). However, few changes in health were found over time among the different groups. The researchers conclude that differences in the physical or emotional health of grandparent caregivers are a function of the underlying characteristics that lead them to provide care, rather than negative health effects due to providing care.

THE FUTURE



THE FUTURE

Since its inception in 1992, the Health and Retirement Study (HRS) has provided an invaluable, long-term look at the complex interplay of health, work, and economic status of Americans age 51 and older. Over the years, the Study has been recognized for its high level of innovation and unique approaches within the social science research arena and has become the premier source of retirement data. In terms of budget, sample size, number of interview hours, and number of researchers involved, the HRS ranks among the largest and most ambitious social and behavioral studies ever undertaken. Rather than being a narrowly controlled investigation of the hypotheses of a small group of scientists, it provides a laboratory for many researchers to explore their theories.

Today, the HRS continues to evolve as data collection techniques expand and the resulting data are refined. In 2006, the HRS was funded for 6 more years, allowing the Study team to adopt several new directions. Some of the recent and future HRS initiatives are described below.

Biomarker Data Collection Expands

In response to growing research interest in the relationship between physical health and other aspects of life, in 2006 the HRS began to gather additional direct measures of HRS participants' physical well-being. In the course of in-person interviews with participants, the researchers have begun to gather objective data about individuals' physical performance (such as grip strength, lung capacity, and walking ability) and blood pressure, and will collect fingerstick blood spot samples to assay for some common disease markers. They will also collect and store salivary DNA samples. These data will provide a foundation for novel studies of chronic disease, morbidity, disability, and, ultimately, mortality within the HRS study population.

Cognitive Measures Strengthened

The HRS was one of the first national health surveys to measure cognitive health at the population level. The Aging, Demographics, and Memory Study (ADAMS), a recently added supplement to the HRS, is the first of its kind to conduct in-home assessments of dementia on a national scale with a nationally representative sample of older adults. Incorporating measures of memory and thinking skills in the HRS has permitted researchers to identify individuals with cognitive impairment and to study the impact of the impairment on their families. Beyond ADAMS, the HRS team has begun a major effort to strengthen its cognitive measures, developing new adaptive testing methods to assess a broader range of cognitive functions than in the past.

More Psychosocial Measures Added

The early waves of the HRS, while strong in areas such as the measurement of participants' economic status, were less robust in their measurement of psychosocial dimensions. Following a series of workshops and Data Monitoring Committee meetings, the HRS has begun to add a significant number of psychosocial measures to its face-to-face interviews with people over age 50. In 2004, adopting an innovation included in a sister study, the English Longitudinal Study of Ageing (ELSA), the HRS began using a "leave behind" self-administered questionnaire to gather expanded psychosocial data. Since then, the HRS has consulted widely with psychologists and sociologists on the design of an expanded psychosocial instrument that was administered in 2006. This work will continue on the versions for 2008 and beyond.

International Studies Grow

As described in the Introduction, the HRS has served as a model for other longitudinal, population-based studies of older adults' health and retirement in other nations. Several of these studies—ELSA; the Survey of Health, Ageing, and Retirement in Europe (SHARE); and the Mexican Health and Aging Study (MHAS)—are well-established. Their success has generated interest in extending these efforts to Israel and countries in Eastern Europe. Other nations—Ireland, Australia, South Korea, Japan, Thailand, and China—are also actively planning HRS or SHARE equivalents, and the task of coordinating these studies has become significant. The availability of comparable cross-national data presents opportunities for new research, such as the investigation of the impact of country-level pension and health system variation that were never before possible with single-country studies.

Perhaps even more important, the new international studies have become nodes around which researchers from a variety of disciplines and fields have clustered. Interaction of these study teams with counterparts in other countries has, in an amazingly brief amount of time, created a new and vibrant international research community that has benefited the HRS in a number of ways, including the development of new instruments and ways of thinking. Recently published research examining the health of U.S. and British populations (Banks et al. 2006) represents one example of the potential of the availability of comparable national data.

Interdisciplinary Research Advances

The HRS has proved to be an effective crucible for initiating and promoting problem-focused research that cuts across multiple domains, such as economic status, health, physiology, neurology, and cognition. This outcome has resulted, in part, from the facts that the Study focuses on problems of concern to different disciplines and that it includes measures drawn from a variety of research realms.

In addition, the HRS has spawned interaction between laboratory research and field-based survey research—two fields that in the past have generally operated independently of one another. For the future, the HRS team expects to see even greater collaboration between these two very separate research worlds, as measures developed in labs move out into the field and labs interested in individual differences administer parts of the HRS questionnaire to subjects in experiments. Already, for example, HRS investigators and others are experimenting with Internet interviewing, an interview mode that is well-adapted to performing experiments.

Survey Coordination Enriches Knowledge Base

A 1987 meeting and subsequent report on data needs for research on health and retirement economics catalyzed the HRS's initial development. Now, some 20 years later, the National Institute on Aging's Behavioral and Social Research Program has begun to look at the field's data needs more broadly. One approach to enrich understanding of the antecedents to retirement and factors affecting retirement decision making is to view the HRS as an integral part of a family of surveys that gather data about human development and aging. For example, connecting the HRS with other studies that begin at birth or at age 18 can provide insight into relevant developmental processes.

Conclusion

As evidenced by the rapidly growing number of publications, working papers, and dissertations that have tapped data gathered through the HRS and the growing use of the HRS by researchers, policymakers, and program planners, the HRS clearly has been a successful longitudinal endeavor. This is true largely because it has served as an essential means to understand the dynamics of the aging of both individuals and the U.S. population. The aging of the population and the retirement of the baby-boom generation are considered by many to be among the most transformative demographic changes ever experienced in this country. In the coming years, by observing the dynamics of retirement and health, and people's social and economic well-being following retirement, the HRS will continue to be a powerful research tool for tracking and understanding this major national social transformation.



REFERENCES

- Angel, Jacqueline L., Cynthia J. Buckley, Ronald J. Angel, and Maren A. Jimenez, 2003, "The Economic Consequences of Marital Disruption for Pre-retirement Age African-American, Hispanic and Non-Hispanic White Women," Paper prepared for the Annual Meeting of the Population Association of America, May 2003, accessed at www.utexas.edu/lbj/faculty/angel/research.html.
- Au, Andrew, Olivia S. Mitchell, and John W.R. Phillips, 2005, "Saving Shortfalls and Delayed Retirement," University of Michigan Retirement Research Center Working Paper 2005-094, Ann Arbor, MI.
- Baker, David W., Joseph J. Sudano, Jeffrey M. Albert, Elaine A. Borawski, and Avi Dor, 2001, "Lack of Health Insurance and Decline in Overall Health in Late Middle Age," *New England Journal of Medicine*, 345/15, 1106-12.
- Banks, James, Michael Marmot, Zoe Oldfield, and James P. Smith, 2006. "Disease and Disadvantage in the United States and in England," *JAMA*, 295, 2037-2045.
- Blau, David M. and Donna B. Gilleskie, 2003, "The Role of Retiree Health Insurance in the Employment Behavior of Older Men," National Bureau of Economic Research Working Paper 10100, Cambridge, MA.
- Blaum, Caroline S., 1999, research described in University of Michigan News Service, <http://www.umich.edu/news/index.html?Releases/1999Nov99/chr111999a>.
- Bond Huie, Stephanie A., Patrick M. Krueger, Richard G. Rogers, and Robert A. Hummer, 2003, "Wealth, Race, and Mortality," *Social Science Quarterly*, 84/3, 667-84.
- Brown, Charles, 2002, "Early Retirement Windows," University of Michigan Retirement Research Center Working Paper 2002-028, Ann Arbor, MI.
- Burkhauser, Richard V., Kenneth A. Couch, and John W. Phillips, 1996, "Who Takes Early Social Security Benefits? The Economic and Health Characteristics of Early Beneficiaries," *The Gerontologist*, 36, 789-99.
- Chan, Sewin and Ann Huff Stevens, 2001, "Job Loss and Employment Patterns of Older Workers," *Journal of Labor Economics*, 19/2, 484-521.
- Cochran, Donna L., Diane R. Brown, and Karl C. McGregor, 1999, "Racial Differences in the Multiple Social Roles of Older Women: Implications for Depressive Symptoms," *The Gerontologist*, 39/4, 465-72.
- Coile, Courtney, 2003a, "Health Shocks and Couples' Labor Supply Decisions," Boston College Center for Retirement Research Working Paper 2003-08, Chestnut Hill, MA.
- _____, 2003b, "Retirement Incentives and Couples' Retirement Decisions," National Bureau of Economic Research Working Paper 9496, Cambridge, MA.
- Coronado, Julia Lynn and Maria Perozek, 2003, "Wealth Effects and the Consumption of Leisure: Retirement Decisions During the Stock Market Boom of the 1990s," Federal Reserve Board Finance and Economics Discussion Series Monograph 2003-20, Washington, DC.
- Dor, Avi, Joseph J. Sudan, and David W. Baker, 2003, "The Effect of Private Insurance on Measures of Health: Evidence from the Health and Retirement Study," National Bureau of Economic Research Working Paper 9774, Cambridge, MA.
- Dushi, Irena and Anthony Webb, 2004, "Annuitization: Keeping Your Options Open," Boston College Center for Retirement Research Working Paper 2004-04, Chestnut Hill, MA.
- Earle, John R., Mark H. Smith, Catherine T. Harris, and Charles F. Longino, Jr., 1998, "Women, Marital Status, and Symptoms of Depression in a Midlife National Sample," *Journal of Women and Aging*, 10/1, 41-57.
- Ekerdt, David J. and Jennifer Kay Hackney, 2002, "Workers' Ignorance of Retirement Benefits," *The Gerontologist*, 42/4, 543-51.
- Engelhardt, Gary V., 2001, "How Does Dipping into Your Pension Affect Your Retirement Wealth?," Syracuse University Center for Policy Research, Policy Brief 22/2001, Syracuse, NY.
- Fonda, Stephanie J., Nancy H. Fultz, Kristi R. Jenkins, Laura M. Wheeler, and Linda A. Wray, 2004, "Relationship of Body Mass and Net Worth for Retirement-Aged Men and Women," *Research on Aging*, 26/1, 153-76.

- Fonda, Stephanie J., Robert B. Wallace, and A. Regula Herzog, 2001, "Changes in Driving Patterns and Worsening Depressive Symptoms Among Older Adults," *The Journals of Gerontology: Social Sciences*, 56B/6, S343-51.
- Freedman, Vicki A., Hakan Aykan, and Linda G. Martin, 2001, "Aggregate Changes in Severe Cognitive Impairment Among Older Americans: 1993 and 1998," *The Journals of Gerontology: Social Sciences*, 56B/2, S100-11.
- _____, 2002, "Another Look at Aggregate Changes in Severe Cognitive Impairment: Further Investigation into the Cumulative Effects of Three Survey Design Issues," *The Journals of Gerontology: Social Sciences*, 59B/1, S126-31.
- Freedman, Vicki A., Hakan Aykan, Douglas A. Wolf, and John E. Marcotte, 2004, "Disability and Home Care Dynamics Among Older Unmarried Americans," *The Journals of Gerontology: Social Sciences*, 57B/3, S25-33.
- French, Eric and John Bailey Jones, 2004, "The Effects of Health Insurance and Self-insurance on Retirement Behavior," Boston College Center for Retirement Research Working Paper 2004-12, Chestnut Hill, MA.
- Friedberg, Leora, 2003, "The Impact of Technological Change on Older Workers: Evidence from Data on Computer Use," *Industrial and Labor Relations Review*, 56/3, 511-29.
- Friedberg, Leora and Anthony Webb, 2003, "Retirement and the Evolution of Pension Structure," National Bureau of Economic Research Working Paper 9999, Cambridge, MA.
- Gallo, William T., Elizabeth H. Bradley, Michele Siegel, and Stanislav V. Kasl, 2000, "Health Effects of Involuntary Job Loss Among Older Workers: Findings from the Health and Retirement Survey," *The Journals of Gerontology: Social Sciences*, 55B/3, S131-40.
- Goldman, Dana P., and Zissimopoulos, Julie M., 2003. "DataWatch: High Out-of-Pocket Spending by the Elderly," *Health Affairs*, 22/3, 194-202.
- Gustman, Alan L., Olivia S. Mitchell, and Thomas L. Steinmeier, 1995, "Retirement Measures in the Health and Retirement Study," *Journal of Human Resources*, 30/Supplement, S57-83.
- Gustman, Alan L. and Thomas L. Steinmeier, 2000a, "Research on Pensions and Social Security," National Bureau of Economic Research, *NBER Reporter*, Summer 2000, 15-18.
- _____, 2000b, "Retirement and Wealth," University of Michigan Retirement Research Center Working Paper 2000-002, Ann Arbor, MI.
- _____, 2001, "Imperfect Knowledge, Retirement and Saving," National Bureau of Economic Research Working Paper 8406, Cambridge, MA.
- _____, 2002a, "Retirement and the Stock Bubble," National Bureau of Economic Research Working Paper 9404, Cambridge, MA.
- _____, 2002b, "Social Security, Pensions and Retirement Behavior Within the Family," National Bureau of Economic Research Working Paper 8772, Cambridge, MA.
- _____, 2004a, "How to Evaluate the Effects of Social Security Policies on Retirement and Saving When Firm Policies Affect the Opportunities Facing Older Individuals," University of Michigan Retirement Research Center Working Paper 2004-078, Ann Arbor, MI.
- _____, 2004b, "Understanding Patterns of Social Security Benefit Receipt, Pension Incomes, Retirement and Saving by Race, Ethnicity, Gender and Marital Status: A Structural Approach," unpublished, July 2004.
- _____, 2004c, "What People Don't Know about Their Pensions and Social Security," pp. 57-125 in William G. Gale, John B. Shoven and Mark J. Warshawsky, eds., *Private Pensions and Public Policies*, Brookings Institution, Washington, DC.
- Haider, Steven and David Loughran, 2001, "Elderly Labor Supply: Work or Play?," RAND Labor and Population Program Working Paper 01-09, Santa Monica, CA.

REFERENCES

- Heisler, Michele, Kenneth M. Langa, Elizabeth L. Eby, A. Mark Fendrik, Mohammed U. Kabeto, and John D. Piette, 2004, "The Health Effects of Restricting Prescription Medication Use Because of Cost," *Medical Care*, 42/7, 626-34.
- Henretta, John C., Martha S. Hill, Wei Li, Beth J. Soldo, and Douglas A. Wolf, 1997, "Selection of Children to Provide Care: The Effect of Earlier Parental Transfers," *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 52B (Special Issue), 110-19.
- Holden, Karen C. and Hsiang-Hui Kuo, 1996, "Complex Marital Histories and Economic Well-being: The Continuing Legacy of Divorce and Widowhood as the HRS Cohort Approaches Retirement," *The Gerontologist*, 36/3, 383-90.
- Hughes, Mary Elizabeth and Linda J. Waite, 2002, "Health in Household Context: Living Arrangements and Health in Late Middle Age," *Journal of Health and Social Behavior*, 43/1, 1-21.
- Hughes, Mary Elizabeth, Linda J. Waite, Tracey A. LaPierre, and Ye Luo, 2004, "All in the Family: Providing Support to Grandchildren and Health in Midlife," Paper presented at the HRS Family Conference, February, Sante Fe, NM.
- Hurd, Michael, 1996, "Saving for Retirement," in Economics of Aging Interest Group Newsletter, Fall 1996, Syracuse, NY.
- Hurd, Michael and Susann Rohwedder, 2004, "The Retirement-Consumption Puzzle: Anticipated and Actual Declines in Spending at Retirement," University of Michigan Retirement Research Center Working Paper 2004-069, Ann Arbor, MI.
- Hurd, Michael, James P. Smith, and Julie M. Zissimopoulos, 2003, "The Effects of Subjective Survival on Retirement and Social Security Claiming," RAND Labor and Population Program Working Paper 03-11, Santa Monica, CA.
- Jenkins, Kristi, 2004, "Obesity's Effects on the Onset of Functional Impairment Among Older Adults," *The Gerontologist*, 44/2, 206-16.
- Johnson, Richard W., 2001, "Medicare and Retirement Decisions," Paper prepared for the Third Annual Conference of the Retirement Research Consortium, May, Washington, DC.
- Johnson, Richard W. and Anthony T. Lo Sasso, 2000, "The Trade-off between Hours of Paid Employment and Time Assistance to Elderly Parents at Midlife," The Urban Institute Working Paper, February 7, Washington, DC.
- _____, 2001, "Balancing Retirement Security with the Needs of Frail Parents: Caregiving, Financial Transfers, and Work by Women at Midlife," *North American Actuarial Journal*, 5/1, 104-08.
- Johnson, Richard W., Amy J. Davidoff, and Kevin Perese, 2003, "Health Insurance Costs and Early Retirement Decisions," *Industrial and Labor Relations Review*, 56/4, 71629.
- Johnson, Richard W., Melissa M. Favreault, and Landon Y. Jones, 2000, "The Interrelationships Among Spousal Work Status, Spousal Health, and Retirement in the HRS," Paper prepared for the Second Annual Conference of the Retirement Research Consortium, May, Washington, DC.
- Johnson, Richard W., Leonard E. Burman, and Deobrah I. Kobes, 2004, "Annuitized Wealth at Older Ages: Evidence from the Health and Retirement Study," Final Report to the Employee Benefits Security Administration, U.S. Department of Labor, The Urban Institute, May 2004, Washington, DC.
- Juster, F. Thomas and Richard Suzman, 1995, "An Overview of the Health and Retirement Study," *Journal of Human Resources*, 30/ Supplement, S7-56.
- Karoly, Lynn A. and Julie Zissimopoulos, 2004, "Self-employment and the 50+ Population," AARP Public Policy Institute Paper 2004-03, accessed online at http://research.aarp.org/econ/2004_03_self_employ.pdf.
- Kezdi, Gabor and Purvi Sevak, 2004, "Economic Adjustment of Recent Retirees to Adverse Wealth Shocks," University of Michigan Retirement Research Center Working Paper 2004-075, Ann Arbor, MI.
- Kington, R. and J. Smith, 1997. "Socioeconomic Status and Racial and Ethnic Differences in Functional Status Associated with Chronic Diseases," *American Journal of Public Health*, Vol. 87:805-810.
- Langa, Kenneth M., Michael E. Chernew, Mohammed U. Kabeto, A. Regula Herzog, Mary Beth Ofstedal, Robert J. Willis, Robert B. Wallace, L.M. Mucha, W.L. Straus, and A. Mark Fendrick, 2001, "National Estimates of the Quantity and Cost of Informal Caregiving for the Elderly with Dementia," *Journal of General Internal Medicine*, 16/11, 770-78.

- Lillard, Lee A. and Robert J. Willis, 2001, "Cognition and Wealth: The Importance of Probabilistic Thinking," University of Michigan Retirement Research Center Working Paper 2001-007, Ann Arbor, MI.
- Lo Sasso, Anthony T. and Richard W. Johnson, 2002, "Does Informal Care from Adult Children Reduce Nursing Home Admissions for the Elderly?," *Inquiry*, 39/3, 279-97.
- Lum, Yat-Sang and Elizabeth Lightfoot, 2003, "The Effect of Health on Retirement Saving Among Older Workers," *Social Work Research*, 27/1, 31-44.
- Luoh, Ming-Ching and A. Regula Herzog, 2002, "Individual Consequences of Volunteer and Paid Work in Old Age: Health and Mortality," *Journal of Health and Social Behavior*, 43, 490-509.
- Lusardi, Annamaria, 2004, "Saving and the Effectiveness of Financial Education," pp. 157-84 in Olivia S. Mitchell and Stephen P. Utkus, eds., *Pension Design and Structure: New Lessons from Behavioral Economics*, Oxford University Press, Oxford.
- McClellan, Mark, 1998, "Health Events, Health Insurance, and Labor Supply: Evidence from the Health and Retirement Survey," pp. 301-46 in David A. Wise, ed., *Frontiers in the Economics of Aging*, University of Chicago Press, Chicago.
- McGarry, Kathleen, 2002, "Health and Retirement: Do Changes in Health Affect Retirement Expectations?," National Bureau of Economic Research Working Paper 9317, Cambridge, MA.
- McGarry, Kathleen and Robert F. Schoeni, 1997, "Transfer Behavior Within the Family: Results from the Asset and Health Dynamics Survey," *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 52B (Special Issue), 82-92.
- _____, 2003, "Medicare Gaps and Widow Poverty," University of Michigan Population Studies Center Research Report No. 03-547, Ann Arbor, MI.
- McNamara, Tay K., Regina O'Grady-LeShane, and John B. Williamson, 2003, "The Role of Marital History, Early Retirement Benefits, and the Economic Status of Women," Boston College Center for Retirement Research Working Paper 2003-01, Chestnut Hill, MA.
- McWilliams, J. Michael, Alan M. Zaslavsky, Ellen Meara, and John Z. Ayanian, 2003, "Impact of Medicare Coverage on Basic Clinical Services for Previously Uninsured Adults," *Journal of the American Medical Association*, 290/6, 757-64.
- Mellor, Jennifer M., 2001, "Long-term Care and Nursing Home Coverage: Are Adult Children Substitutes for Insurance Policies?," *Journal of Health Economics*, 20/4, 527-47.
- Munnell, Alicia H., Kevin E. Cahill and Natalia A. Javin, 2003, "How Has the Shift to 401(k)s Affected the Retirement Age?," Boston College Center for Retirement Research Issue Brief 13, Chestnut Hill, MA.
- Muramatsu, Naoko, Richard T. Campbell, Ruby Hoyem, Martha A. Jacob, Chris Ross, and Hongjun Yin, 2004, "Family Care, Nursing Home Transitions, and States' Long Term Care Policies," Paper presented at the HRS Family Conference, February, Sante Fe, NM.
- Ness, Jose, Dominic J. Cirillo, David R. Weir, Nicole L. Nisly, and Robert B. Wallace, 2005, "Use of Complementary Medicine in Older Americans: Results from the Health and Retirement Study," *The Gerontologist*, 45/4, 516-24.
- Ostbye, Truls, Gary N. Greenberg, Donald H. Taylor, and Ann Marie M. Lee, 2003, "Screening Mammography and Pap Tests Among Older American Women 1996-2000: Results from the Health and Retirement Study (HRS) and Asset and Health Dynamics Among the Oldest Old (AHEAD), 2003," *Annals of Family Medicine*, 1/4, 209-17.
- Ostbye, Truls, Donald H. Taylor, and S.H. Jung, 2002, "A Longitudinal Study of the Effects of Tobacco Smoking and Other Modifiable Risk Factors on Ill Health in Middle-Aged and Older Americans: Results from the Health and Retirement Study and Asset and Health Dynamics among the Oldest Old Survey," *Preventive Medicine*, 34/3, 334-35.
- Ostermann, Jan and Frank A. Sloan, 2001, "Effects of Alcohol Consumption on Disability Among the Near Elderly: A Longitudinal Analysis," *The Milbank Quarterly*, 79/4, 487-515.
- Panis, Constantijn, 2003, "Annuities and Retirement Satisfaction," RAND Labor and Population Program Working Paper 03-17, Santa Monica, CA.

REFERENCES

- Perreira, Krista M. and Frank A. Sloan, 2002, "Excess Alcohol Consumption and Health Outcomes: A 6-Year Follow-up of Men over Age 50 from the Health and Retirement Study," *Addiction*, 97, 301-10.
- _____, 2001, "Life Events and Alcohol Consumption Among Mature Adults: A Longitudinal Analysis," *Journal of Studies on Alcohol*, 62/4, 501-08.
- Pienta, Amy M., Mark D. Hayward, and Kristi Rahrig Jenkins, 2000, "Health Consequences of Marriage for the Retirement Years," *Journal of Family Issues*, 21/5, 559-86.
- Poterba, James M., 2004, "Portfolio Risk and Self-Directed Retirement Saving Programmes," *The Economic Journal*, 114, C26-51.
- Reid, Jennifer and Melissa Hardy, 1999, "Multiple Roles and Well-Being Among Midlife Women: Testing Role Strain and Role Enhancement Theories," *The Journals of Gerontology: Social Sciences*, 54B/6, S329-38.
- Richardson, Caroline, Jennifer T. Hanlon, Hillary J. Mull, Sandeep Vijan, Rodney Hayward, Linda A. Wray, and Kenneth M. Langa, 2003, "The Impact of Poor Health Behaviors on Workforce Disability," University of Michigan Retirement Research Center Working Paper 2003-057, Ann Arbor, MI.
- Rodgers, Willard L., Mary Beth Ofstedal, and A. Regula Herzog, 2003, "Trends in Scores on Tests of Cognitive Ability in the Elderly U.S. Population, 1993-2000," *The Journals of Gerontology: Social Sciences*, 58B/6, S338-46.
- Rosen, Harvey S. and Stephen Wu, 2003, "Portfolio Choice and Health Status," National Bureau of Economic Research Working Paper 9453, Cambridge, MA.
- Schoenbaum, Michael, 1997, "Do Smokers Understand the Mortality Effects of Smoking? Evidence from the Health and Retirement Survey," *American Journal of Public Health*, 87/5, 755-59.
- Sloan, Frank A., V. Kerry Smith, and Donald H. Taylor, JR., 2003, *The Smoking Puzzle. Information, Risk Perception, and Choice*, Harvard University Press, Cambridge, MA.
- Smith, James P., 1999, "Healthy Bodies and Thick Wallets: The Dual Relation Between Health and Economic Status," *Journal of Economic Perspectives*, 13/2, 145-66.
- _____, 2003, "Consequences and Predictors of New Health Events," National Bureau of Economic Research Working Paper 10063, Cambridge, MA.
- Smith, James P. and Michael Hurd, 2002, "Expected Bequests and their Distribution," National Bureau of Economic Research Working Paper 9142, Cambridge, MA.
- Smith, V. Kerry, Donald H. Taylor, Frank A. Sloan, F. Reed Johnson, and William H. Desvousges, 2001, "Do Smokers Respond to Health Shocks?," *Review of Economics and Statistics*, 83/4, 675-87.
- Sturm, Roland, Jeanne S. Ringel, and Tatiana Andreyeva, 2004, "Increasing Obesity Rates and Disability Trends," *Health Affairs*, 23/2, 199-205.
- Sudano, Joseph J. and David W. Baker, 2003, "Intermittent Lack of Health Insurance Coverage and Use of Preventive Services," *American Journal of Public Health*, 93/1, 130-37.
- Suthers, Kristen, Jung Ki Kim, and Eileen Crimmins, 2003, "Life Expectancy with Cognitive Impairment in the Older Population of the United States," *The Journals of Gerontology: Social Sciences*, 58B/3, S179-86.
- Townsend, Aloen L., Baila Miller, and Shenyang Guo, 2001, "Depressive Symptomatology in Middle-aged and Older Married Couples: A Dyadic Analysis," *The Journals of Gerontology: Social Sciences*, 56B/6, S352-64.
- Turvey, Carolyn L, Caroline Carney, Stephan Arndt, Robert B. Wallace, and Regula Herzog, 1999, "Conjugal Loss and Syndromal Depression in a Sample of Elders Aged 70 Years or Older," *American Journal of Psychiatry*, 156, 1596-601.
- University of Michigan, 2002, Health and Retirement Study Winter 2002 Newsletter, Ann Arbor, MI.
- Venti, Steven F. and David A. Wise, 1998, "The Cause of Wealth Dispersion at Retirement: Choice or Chance?," *American Economic Review*, 88, 185-91.
- _____, 2001, "Aging and Housing Equity: Another Look," National Bureau of Economic Research Working Paper 8606, Cambridge, MA.
- Vijan, Sandeep, Rodney A. Hayward, and Kenneth M. Langa, 2004, "The Impact of Diabetes on Work-Force Participation: Results from a National Household Sample," *Health Services Research*, 39/6, 1653-70.
- Waite, Linda J. and Mary Elizabeth Hughes, 1999, "At Risk on the Cusp of Old Age: Living Arrangements and Functional Status Among Black, White and Hispanic Adults," *The Journals of Gerontology: Social Sciences*, 54B/3, S136-44.

Walker, Lina, 2004, "Elderly Households and Housing Wealth: Do They Use It or Lose It?," University of Michigan Retirement Research Center Working Paper 2004-070, Ann Arbor, MI.

Ward-Batts, Jennifer, 2001, "Health, Wealth and Gender: Do Health Shocks of Husbands and Wives Have Different Impacts on Household Wealth?," University of Michigan Retirement Research Center Working Paper 2001-016, Ann Arbor, MI.

Weir, David, Robert J. Willis, and Purvi Sevak, 2002, "The Economic Consequences of Widowhood," University of Michigan Retirement Research Center Working Paper 2002-023, Ann Arbor, MI.

Weng, Haoling H., Lori A. Bastian, Donald H. Taylor, Barry K. Moser, and Truls Ostbye, 2004, "Number of Children Associated with Obesity in Middle-Aged Women and Men: Results from the Health and Retirement Study," *Journal of Women's Health*, 13/1, 85-91.

Willis, Robert J., 1999, "Theory Confronts Data: How the HRS Is Shaped by the Economics of Aging and How the Economics of Aging Will Be Shaped by the HRS," *Labour Economics*, 6/2, 119-45.

Wilmoth, Janet and Gregor Koso, 2002, "Does Marital History Matter? Marital Status and Wealth Outcomes Among Pre-retirement Adults," *Journal of Marriage and Family*, 64/1, 254-68.

Woodbury, Richard, 1999, "Research Highlights in the Demography and Economics of Aging, Issue No. 4," Brief prepared for the National Institute on Aging, Washington, DC.

Wray, Linda A., A. Regula Herzog, Robert J. Willis, and Robert B. Wallace, 1998, "The Impact of Education and Heart Attack on Smoking Cessation Among Middle-aged Adults," *Journal of Health and Social Behavior*, 39/4, 271-94.

Zhang, Zhenmei and Mark D. Hayward, 2001, "Childlessness and the Psychological Well-being of Older Persons," *The Journals of Gerontology: Social Sciences*, 56B/5, S311-20.



APPENDIX A

HRS EXPERIMENTAL MODULES

Every wave of the Health and Retirement Study (HRS) contains a set of experimental modules that are administered to a random subsample of respondents. The intent of the modules is to allow HRS investigators, as well as other researchers on aging, to suggest questions that test out new and untried content, have a methodological purpose, or that, in combination with the rest of the HRS data, would permit new research questions to be investigated. For a more detailed inventory of these modules and their use by researchers, visit the HRS website at: http://hrsonline.isr.umich.edu/meta/sho_meta.php?hfyle=modules.

OVERVIEW OF EXPERIMENTAL MODULES

HRS 2002 (Wave 6) Modules

Self-assessed health utilities; willingness to pay for disease prevention; restless leg syndrome, night leg cramps, and neck and shoulder pain; risk aversion; Internet use; loneliness, stress, and social support/social burden; ELSA health questions; numeracy; positive well-being; later life education; subjective uncertainty about stock market returns.

HRS 2000 (Wave 5) Modules

Medicare knowledge; alternative medicine; planning and expectations for retirement; social and economic altruism; benevolence and obligation; health plan booklet; health utilities index; risk tolerance; alcohol consumption and instrumental activities of daily living (IADL) measures; proxy validation; social altruism; valuing health.

HRS 1998 (Wave 4) Modules

There were limited modules in HRS 1998, due to the addition of two new cohorts and the merger of the original HRS and AHEAD cohorts. The 1998 modules were targeted primarily toward AHEAD sample members who were asked activity of daily living (ADL) and cognition questions corresponding to similar modules in previous waves.

HRS 1996 (Wave 3) Modules

Consumption and anchoring; health during childhood; health pedigree; personality inventory; Medicare attitudes and preferences; volunteerism and time use; preference parameters for consumption, saving, and labor supply; advance directives; attitudes toward inter-familial transfers; retirement planning; saving for retirement.

AHEAD 1995 (Wave 2) Modules

Unfolding brackets with different entry points; Wave 1 ADL questions; Longitudinal Study of Aging 2 (LSOA2) ADL questions; security and safety; sleep; living wills; in-depth ADLs.

HRS 1994 (Wave 2) Modules

CES-D depression scale; crystallized intelligence; functional health; long-run income elasticity of labor supply; risk aversion; social support; parent-child transfers; ADLs; activities and time allocation; nutrition.

AHEAD 1993 (Wave 1) Modules

Resilience; time use; alternative ADLs; WAIS Similarities; quality of life; in-depth ADLs; financial pressure.

HRS 1992 (Wave 1) Modules

Physiological health measures; ADL measures from NLTCs and NHIS; meta-memory; process benefits; employment alternatives; parental wealth; occupational injuries; health risks; substitution elasticity of consumption.

BRIEF DESCRIPTIONS OF EXPERIMENTAL MODULES

HRS 2002 (Wave 6) Modules

- **Module 1: Self-assessed health utilities.** Asks for a self-rating of health between 0 (death) and 100 (perfect health for your age/a 20-year-old), and then uses bracket-like techniques to assess willingness to trade years of life for perfect health, based on comparing two fictional persons with health similar to the respondent.
- **Module 2: Willingness to pay for disease prevention.** Assesses willingness to pay (dollars) for prevention of cancer or Alzheimer's disease.
- **Module 3: Restless leg syndrome, night leg cramps, and neck and shoulder pain.** Measures symptoms of restless leg syndrome (associated with sleep problems and health consequences of sleep problems), night leg cramps, and neck and shoulder pain.
- **Module 4: Risk aversion.** Repeats previous module questions about large risk aversion to be paired with questions about small risk aversion asked in the main survey.
- **Module 5: Internet use.** Asks about computer and Internet access and use at work and at home.
- **Module 6: Loneliness, stress, and social support/social burden.** Assesses negative well-being in three of its dimensions. This module has twice the sample size of other modules, and hence also takes the place of Module 7. It is part of an analytic project under an NIA-funded program at the University of Chicago, developed in consultation with the HRS.

- **Module 8: ELSA health questions.** Provides a cross-reference between health items asked in the English Longitudinal Study of Ageing (ELSA) and the HRS.
- **Module 9: Numeracy.** Tests additional numeracy items and uses a six-way design to test for context effects across four types of mathematical skills. Each math item is couched in three contexts—health, economic/market, and context-free—and respondents are assigned to pre-designated combinations so that they receive each math problem only once. It also overlaps with an ELSA proposal to develop numeracy measures for large surveys.
- **Module 10: Positive well-being.** Builds on the work of Powell Lawton and others to assess the extent of positive feelings about life and health.
- **Module 11: Later life education.** Asks about educational activities in later life.
- **Module 12: Subjective uncertainty about stock market returns.** Assesses the respondent's full distribution of expectations of one-year stock market returns by asking for probabilities that the return would be above or below specified levels.

HRS 2000 (Wave 5) Modules

- **Module 1: Medicare knowledge.** Asks questions and presents hypothetical situations to ascertain respondents' knowledge about health maintenance organization (HMO) and non-HMO Medicare and about sources of their information about Medicare.

- **Module 2: Alternative medicine.** Covers recent and past use of herbal or other dietary supplements and medications, treatments by chiropractors, massage therapists, or acupuncturists, and spiritual practices that may be related to health.
- **Module 3: Planning and expectations for retirement.** Asks about activities undertaken by respondents to plan for retirement; the questions are slightly different for those who are already fully retired than for those still anticipating full retirement. A subset of questions is designed to get at the propensity to plan ahead.
- **Module 4: Economic altruism.** Ascertain willingness to give regular financial assistance to relatives and friends at varying levels of need, as well as to charities.
- **Module 5: Benevolence and obligation.** Asks about the respondent's self-perception as a giver to others, and his or her reasons for giving, especially as they relate to family members.
- **Module 6: Request for health plan booklet.** Requests the respondent's health plan booklet to help assess the possibility of using this method to obtain details of health insurance coverage.
- **Module 7: Health utilities index.** Implements the Mark III version of the Health Utilities Index to assess problems with vision, hearing, mobility, hand and arm use, mental functioning, general discomfort, and outlook on life. Domain scores and overall utility preference scores can be computed.

APPENDIX A

- **Module 8: Tolerance for large and small risks.** Addresses the respondent's willingness to take financial risks by posing a set of hypothetical situations and asks what he or she would do in those situations.
- **Module 9: Alcohol consumption and HRS 1992 IADL measures.** A very short module with a few questions about difficulties of everyday activities and alcohol consumption.
- **Module 10: Proxy validation.** Repeats selected questions asked in the general survey about health and daily activities, but asks the respondent to answer these questions about his or her spouse/partner. The intention is to look at the agreement between respondent and spouse reports of health problems.
- **Module 11: Social altruism.** Asks about connectedness to other people and the emotional support available from the respondent's spouse/partner, adult children, parents and parents-in-law, and friends.
- **Module 12: Valuing health.** Asks respondents to compare their present state of health to perfect health using a standard time-tradeoff question valuing health in terms of years of life, and a similar willingness-to-pay question valuing health in terms of money.

HRS 1998 (Wave 4) Modules

- **Module 1: AHEAD 1993 ADL questions.** Contains questions about difficulty and the use of equipment and help in activities of daily living. Most respondents who were asked to do this module in 1998 were asked to do the same module in AHEAD 1995.

- **Module 3: ADL measures used for the Longitudinal Studies of Aging.** Contains the ADL questions used in AHEAD 1993 and AHEAD 1995, which were in turn based on those proposed for (and subsequently used in) the second LSOA. Most respondents who were asked to do this module in 1998 were asked to do the same module in both AHEAD 1993 and AHEAD 1995.

- **Module 4: ADL measures used for the National Long-Term Care Study (NLTC).** Most respondents who were asked to do this module in 1998 were asked to do the same module in AHEAD 1993.

- **Module 5: 1990 Census ADL questions.** Slightly less than half of the respondents who were asked to do this module in 1998 were asked to do the same module in AHEAD 1993.

- **Module 10: Cognitive section for proxy interviewed sample members.** Also included in the module section, although not actually a module, is a section of the interview that is administered to sample persons for whom proxy interviews were done, but who are willing and able to do this section themselves.

HRS 1996 (Wave 3) Modules

- **Module All: Consumption and anchoring.** Contains questions on food consumption, as well as questions designed to assess the degree to which the responses to unfolding brackets are affected by the level of the entry point (i.e., the "anchoring effect"). To yield adequate sample sizes, these questions were asked of all respondents.

- **Module 1: Health during childhood.** Contains questions on the individual's health when growing up (from birth to age 16), on parental family composition, and on the parental family's economic status.
- **Module 2: Health pedigree.** Asks about the individual's health pedigree—whether the individual's parents are still living, the cause of death if deceased, health status if living, and cause and age of death of any deceased siblings.
- **Module 3: Personality.** Provides a brief personality inventory based on the respondent's rating of how closely each of 12 descriptive words fits the respondent.
- **Module 4: Medicare attitudes and preferences.** Attempts to measure respondents' attitudes and preferences toward Medicare. Includes questions on whether the respondent would prefer various cash equivalent dollar payments to Medicare insurance, and is thus a form of contingent valuation.
- **Module 5: Volunteerism and time use.** Asks how many hours the respondent spent in the past year on 10 types of volunteer activities ranging from helping religious organizations to helping neighbors. Hours spent in 11 time-use activities ranging from television watching to reading are also obtained.
- **Module 6: Preference parameters for consumption, saving, and labor supply.** Attempts to understand the respondents' preferences toward consumption, saving, and labor supply by asking about their behavior if they won a hypothetical sweepstakes that would pay an amount equal to their current family income for life.

- **Module 7: Advance directives.** Contains questions on advance directives and respondent preferences toward a hypothetical cancer treatment under a variety of costs and treatment success-rate assumptions.
- **Module 8: Attitudes toward inter-familial transfers.** Examines respondents' willingness to give financial help to parents and/or siblings under a variety of hypothetical situations. These data, in conjunction with those from HRS 1994 Module 7, are designed to develop a better understanding of altruism.
- **Module 9: Retirement planning.** Asks about retirement planning and saving for retirement, and contains a question intended to measure the extent to which the respondent understands compound interest. It asks about the extent to which the respondent relies or plans to rely on Social Security, employer-provided pension plans, individual retirement accounts, 401(k) or Keogh plans, and private savings. Also asks retirees questions about the adequacy of their savings.
- **Module 10: Saving for retirement.** Contains questions on the current level of savings for retirement and on the reliance or expected reliance on public, private, and personal sources of income in retirement.

AHEAD 1995 (Wave 2) Modules

Each of the AHEAD 1995 modules includes questions designed to assess the importance of anchoring effects in unfolding questions about dollar amounts. In each case, respondents were asked about the amount of money they had in savings accounts and total household consumption in the past month.

- **Modules 1 and 2: AHEAD 1993 ADL questions.** Questions about difficulty and the use of equipment and help in activities of daily living that were asked in AHEAD 1993 were modified in 1995. To assist analysts who wish to take account of these wording changes when examining changes in responses across waves, a random subsample (double the size of the other modules) was asked the 1993 version of the ADL questions (in addition to the revised ADL questions that were asked in the main interview).
- **Module 3: LSOA2 ADL questions.** Asks the same questions as Module 3 in AHEAD 1993, and were asked of the same respondents in both waves.
- **Module 4: Security and safety.** Poses questions about the subjective probability of being the victim of a crime, and steps taken out of concern about crime.
- **Module 5: Sleep.** Includes questions about trouble falling asleep and staying asleep through the night, problems of falling asleep during the day, and the use of medications to aid sleep. It also includes two questions about the sense of personal control.

- **Module 6: Living wills.** Inquires about end-of-life directives, and whether or not the respondent has named anyone to make health care decisions for them if they are unable to do so themselves. Respondents were also presented with two scenarios about someone with a life-threatening illness who is presented with the choice of taking an experimental treatment with randomly varied cost and probability of success.
- **Module 7: In-depth ADLs.** Asks the same questions as Module 7 in AHEAD 1993, of the same respondents in both waves.

HRS 1994 (Wave 2) Modules

- **Module 1: Center for Epidemiologic Studies Depression (CES-D) Scale.** Assesses the degree to which the HRS 1994 scale loses information compared with the original HRS 1992 scale. The version of the CES-D Depression Scale included in the HRS 1994 instrument is a substantially truncated version of the scale used in 1992.
- **Module 2: Crystallized intelligence.** It was decided to eliminate the similarities test (a test of crystallized intelligence) in the main survey, on the grounds that crystallized IQ is not expected to change with any rapidity in the HRS age range and is expected to change more slowly than memory. The similarities test in this module is the same test contained in the HRS 1992.

APPENDIX A

- **Module 3: Functional health.** A methodological test of the HRS 1994 functional health scale compared with the HRS 1992 scale. The HRS 1992 scale was a four-point scale associated with level of difficulty in performing various activities. Telephone interview considerations in HRS 1994 led to the development and use of a two-point scale to be followed by a second two-point scale in the event of a “some difficulty” response. This module uses the original four-point scale designed for a personal interview environment.
 - **Module 4: Long-run income elasticity of labor supply.** Sets up a hypothetical set of circumstances to yield pure estimates of income elasticity. The hypothetical illustration concerns the effect of a windfall gain on labor hours, along with measures that will generate an assessment of the strength of an altruism parameter.
 - **Module 5: Risk aversion.** HRS 1992 contained a measure of risk aversion based on responses to a hypothetical situation involving alternate jobs and respondents’ willingness to take jobs with various risky characteristics. This module is an attempt to refine the risk aversion measure by observing the distribution of risk aversion at the extremes of the distribution, where the 1992 data suggest most of the sample actually resides.
 - **Module 6: Social support.** Asks questions about respondents’ sources of social support, including spouses, friends, and co-workers.
 - **Module 7: Transfers.** Examines motivations for transfers from parents to children. It is intended to aid in the analysis of preference parameters, specifically altruism.
 - **Module 8: Activities of daily living.** Gathers baseline data on the incidence of ADL deficiencies in the sample, and to find out who the ADL helpers are. Part of the module asks about future needs for ADL help, as well as whether or not respondents perceive themselves to be at risk of helping someone else with ADLs.
 - **Module 9: Activities and time allocation.** Seeks to assess the strength of some of the pull toward retirement that can be attributed to the desire to reallocate time to non-market time issues.
 - **Module 10: Nutrition.** Asks respondents how often they eat foods from the various major food groups. The list of food types is fairly detailed, e.g., distinguishing red meats from other meat and from fish.
- ### AHEAD 1993 (Wave 1) Modules
- **Module 1: Resilience.** Asks an innovative sequence of questions designed to measure the concept of resilience, defined as the individual’s ability to recover quickly and completely from any misfortune or challenge.
 - **Module 2: Time use.** Contains a set of questions on unpaid but economically productive activities: home maintenance, volunteer work, and informal help to others. Together with core-study questions on paid employment, these questions permit a balanced assessment of the productive contributions of older adults.
- **Modules 3 and 4: Alternative ADLs.** Contains the ADL questions proposed for (and subsequently used in) the second LSOA (Module 3) and replicates the ADL function items on the NLTC screen (Module 4).
 - **Module 5: WAIS Similarities.** Applies the WAIS Similarities, a widely used measure of abstract reasoning that was used in the main HRS 1992 interview; also includes two ADL questions that are asked on the 1990 U.S. Census long form.
 - **Module 6: Quality of life.** Asks questions focusing on the essential quality of life issue—whether or not life is still worth living.
 - **Module 7: In-depth ADLs.** Probes various detailed adaptive strategies for bathing to explore whether or not adaptive mechanisms account for a lack of reported difficulty with bathing despite obvious physical or cognitive impairments.
 - **Module 9: Financial pressure.** Asks respondents if they find it difficult to pay their bills or if they cut back on nonmedical expenses, such as eating out or traveling. Also asks about the perceived fairness of policy alternatives for making long-term care in nursing homes more accessible to older people.
- ### HRS 1992 (Wave 1) Modules
- **Module A: Physiological measurements of health and functioning status.** Measures vital capacity using Peak Expiratory Flow Rate (PEFR) and assesses grip strength to provide a means of validating self-reports.

- **Modules B and C: ADL measures used in the National Long-Term Care Survey and in the National Health Interview Survey.** Collects data to provide researchers with a cross-walk that would allow the HRS ADL measures to be recalibrated to better correspond to the ADL measures in these other studies.
- **Module D: Meta-memory.** Asks a battery of questions to assess meta-memory, along with the Census Bureau screen question used for the presence of ADL limitations.
- **Module E: Process benefits.** Uses a set of 10-point scales to ascertain respondents' intrinsic satisfaction from work, housework, and various types of leisure.
- **Module F: Employment alternatives.** Asks a series of questions on 10-point probability scales asking respondents about the likelihood that they can find jobs like their present jobs but with specified differences in characteristics, such as different amounts of pay, greater amounts of flexibility in hours per week, weeks per year, and hours per day.
- **Module G: Parental wealth.** Asks a set of questions about the asset holdings of respondents' parents, and then requests permission to talk to the parents.
- **Module H: Occupational injuries.** Inquires about various characteristics of work that relate to the likelihood of on-the-job injuries.
- **Module J: Health risks.** Asks a set of questions about the likelihood that respondents or spouses will need long-term care in a nursing home, longevity estimates relating to the spouse of the respondent, expectations about having medical care insurance at age 65 provided by an employer, and questions about the coverage of Medicare and the coverage that could be available from other types of insurance. Also asks about Medicaid coverage and respondents' perceptions about their eligibility for Medicaid.
- **Module K: Substitution elasticity of consumption.** A highly experimental measure of the intertemporal elasticity of substitution in consumption, a concept that plays a key role in economic models of life-cycle saving behavior.

APPENDIX B

HRS CO-INVESTIGATORS, STEERING COMMITTEE, AND DATA MONITORING COMMITTEE (1990-2006)

CO-INVESTIGATORS

Robert Willis, Ph.D.
(1995-present)
HRS Co-Director
University of Michigan

David Weir, Ph.D.
(2000-present)
HRS Co-Director
University of Michigan

F. Thomas Juster, Ph.D.
(1990-present)
HRS Director Emeritus
University of Michigan

Charles Brown, Ph.D.
(1990-present)
University of Michigan

Alan Gustman, Ph.D.
(2000-present)
Dartmouth College

John Henretta, Ph.D.
(1993-2006)
University of Florida

Regula Herzog, Ph.D.*
(1993-2002)
University of Michigan

Daniel Hill, Ph.D.
(1995-2005)
University of Michigan

Martha Hill, Ph.D.
(1993-1999)
University of Michigan

Michael Hurd, Ph.D.
(1990-present)
SUNY Stony Brook/RAND Corporation

Kenneth Langa, Ph.D., M.D.
(2005-present)
University of Michigan

John J. McArdle, Ph.D.
(2005-present)
University of Southern California

Olivia Mitchell, Ph.D.
(1991-present)
University of Pennsylvania

Mary Beth Ofstedal, Ph.D.
(2000-present)
University of Michigan

Willard Rodgers, Ph.D.
(1993-2006)
University of Michigan

Beth J. Soldo, Ph.D.
(1990-present)
University of Pennsylvania

Thomas Steinmeier, Ph.D.
(1991-present)
Texas Tech University

Robert Wallace, M.D.
(1990-present)
University of Iowa

Doug Wolf, Ph.D.
(1993-1995)
Syracuse University

STEERING COMMITTEE

Affiliations listed are as of the time of Steering Committee membership. The Steering Committee completed its service in 2004.

Henry J. Aaron, Ph.D.
(1990-1992)
Brookings Institution

John Breitner, M.D.
(1996-1997)
Duke University

Richard Campbell, Ph.D.
(1995-1997)
University of Illinois

Denis Evans, M.D.
(2000-2004)
Rush University

Douglas Ewbank, M.D.
(2000-2004)
University of Pennsylvania

Alan M. Garber, M.D., Ph.D.
(1990-1998)
Stanford University

Robert Hauser, Ph.D.
(2000-2004)
University of Wisconsin

Albert Hermalin, Ph.D.
(1995-1997)
University of Michigan

Christopher Hertzog, Ph.D.
(2000-2004)
Georgia Institute of Technology

George Kaplan, Ph.D.
(1996-1997)
University of Michigan

Raynard Kington, M.D., Ph.D.
(2000-2002)
NHANES/National Institutes of Health

M. Powell Lawton, Ph.D.*
(1995-1997)
Philadelphia Geriatric Center

Lee Lillard, Ph.D.*
(1995-1998)
RAND Corporation

John J. McArdle, Ph.D.
(2004)
University of Virginia

Mark McClellan, M.D., Ph.D.
(1997-1998)
Stanford University

David Meltzer, M.D., Ph.D.
(2000-2004)
University of Chicago

Marilyn Moon, Ph.D.
(1991-1997)
The Urban Institute

John Rust, Ph.D.
(2000-2004)
Yale University

Jonathan Skinner, Ph.D.
(2000-2004)
Dartmouth College

Frank Sloan, Ph.D.
(1990-1997)
Vanderbilt University

Timothy Smeeding, Ph.D.
(1995-1998)
Syracuse University

Richard Suzman, Ph.D.
(1990-2004)
Ex Officio
National Institute on Aging

John Ware, Ph.D.
(1990-1992)
New England Medical Center

Robert Willis, Ph.D.
(1990 -1994)
University of Chicago

Doug Wolf, Ph.D.
(1995-1997)
Syracuse University

Kenneth Wolpin, Ph.D.
(2000-2004)
University of Pennsylvania

DATA MONITORING COMMITTEE

Current Members

James Smith, Ph.D., Chair
(1991-present)
RAND Corporation

David A. Bennett, M.D.
(2006-present)
Rush University

Lisa Berkman, Ph.D.
(2000-present)
Harvard University

John Cacioppo, Ph.D.
(2005-present)
University of Chicago

Nicholas Christakis, M.D., Ph.D.
(2005-present)
Harvard University

Eileen Crimmins, Ph.D.
(2000-2006)
University of Southern California

Linda Fried, M.D., M.P.H.
(1991-present)
Johns Hopkins University

Richard Kulka, Ph.D.
(2000-present)
Abt Associates

David Laibson, Ph.D.
(2000-present)
Harvard University

Carol Ryff, Ph.D.
(2000-present)
University of Wisconsin–Madison

Jonathan Skinner, Ph.D.
(2005-present)
Dartmouth College

Richard Suzman, Ph.D.
(1991-present)
Ex Officio
National Institute on Aging

David Wise, Ph.D.
(1991-present)
Harvard University

Social Security Administration Liaison
Irena Dushi, Ph.D.

**National Institute on Aging
Neuroscience and Neuropsychology of
Aging Program Liaison**
Dallas Anderson, Ph.D.

Past Members

*Affiliations listed are as of the time
of Data Monitoring Committee
membership.*

Lawrence Atkins
Winthrop, Stimson, Putnam
& Roberts

David Cutler, Ph.D.
Harvard University

Alex Inkeles, Ph.D.
Stanford University

Lee Lillard, Ph.D.*
RAND Corporation

Kenneth Manton, Ph.D.
Duke University

John J. McArdle, Ph.D.
University of Virginia

Mark McClellan, M.D., Ph.D.
Stanford University

APPENDIX B

Nancy McConnell
Population Resource Center

George C. Myers, Ph.D.*
Duke University

Adrian Ostfeld, M.D.
Yale University

Dorothy Rice, Sc.D.
University of California,
San Francisco

Dallas Salisbury, M.A.
Employee Benefit Research Institute

Sylvester Schieber, Ph.D.
Watson Wyatt Worldwide

Anderson Smith, Ph.D.
Georgia Institute of Technology

Marta Tienda, Ph.D.
Princeton University

Executive Secretaries

Rose Maria Li, M.B.A., Ph.D.
(2002-present)

Richard Woodbury, Ph.D.
(2000-2001)

Past Federal Agency Sponsor Representatives

*Representatives of agencies that have
provided funds or technical assistance*

Department of Health and Human Services

*Office of the Assistant Secretary
for Planning and Evaluation*

Robert Clark, Ph.D.

Steven Sandell, Ph.D.*

Department of Commerce

Census Bureau

Kevin Kinsella, M.A.

Department of Labor

*Pension and Welfare Benefits
Administration*

Richard Hinz, M.P.A., C.F.A.

Patricia Willis, Ph.D.

Social Security Administration

Howard Iams, Ph.D.

Janice Olson Ph.D.

John Phillips, Ph.D.

Past Federal Agency Liaisons

Department of Health and Human Services

*Agency for Health Care
Policy and Research
(now Agency for Healthcare
Research and Quality)*

Peter Kemper, Ph.D.

*Health Care Financing Administration
(now Centers for Medicare and
Medicaid Services)*

Elizabeth Mauser, Ph.D.

Marshall McBean, M.Sc., M.D.

Lynne Penberthy, M.D., M.P.H.

*National Center for Health Statistics
Centers for Disease Control and
Prevention*

Jack Feldman, Ph.D.

Congressional Budget Office

Barbara Atrostic, Ph.D.

Department of the Treasury

Gillian Hunter

Observer

American Association of Retired Persons

Richard Seefer
(1991, 1995-1996)

*Deceased



NATIONAL INSTITUTE ON AGING
NATIONAL INSTITUTES OF HEALTH
**U.S. DEPARTMENT OF HEALTH AND
HUMAN SERVICES**

NIH PUBLICATION NO. 07-5757
MARCH 2007