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The Retirement Needs Framework: Issues for Health Actuaries

by Anna M. Rappaport

Introduction

Health actuaries focus on benefits at all ages — and often separately think of benefits for active employees as compared to retirees. They also focus on both public and private programs. As populations are aging in many countries, providing for their economic and health needs is a challenge to individuals, families, businesses, and the nations themselves.

An analysis of the post-retirement period indicates retirees have changing needs, which often are not fully recognized or planned for at the time of retirement.

In looking at issues related to retirement and the information needs of retirement professionals, the Society of Actuaries observed that most of the focus has been on building up adequate funds for retirement. There has been relatively little focus on the use of funds after retirement and on changing needs after retirement. In 1997, the Society of Actuaries started a research project focusing on the post-retirement period. The first two phases of the Retirement Needs Framework project included a combination of research papers and a symposium for presentation and discussion of the papers. The 14 papers and some key discussions have been published in a monograph "Retirement Needs Framework: SOA Monograph M-RS00-1" by the Society of Actuaries. This article provides a project overview and discussion of some issues which may be of substantial interest to health actuaries. It focuses on three areas: models, data, and issues for the frail elderly. There is a great deal more of interest in the monograph.

Project Goals and Overview

This project is focused on understanding post-retirement events, understanding modeling approaches for working with the events, and searching out data. The post-retirement events include: inflation, death of a spouse, changes in health, changes in care needs, changes in the availability of family members to provide care, changes in housing needs, and changes in interests and avocations.

The project sets the stage for better modeling and development of retiree needs. The project committee looked for areas where there are mismatches between retiree needs and the common forms of utilization and distribution of retirement assets. The project participants were multi-disciplinary and included actuaries, attorneys, demographers, and economists. The participants included academics and practitioners, offering a chance for the two groups to work together and exchange ideas. The issues are universal across geography, but most of the discussion relates to the United States and Canada, and policy connections link to these two countries.

This project is extremely important because of changing individual, government, and corporate retirement roles. Responsibility of the individual is being stressed. At the same time, so much of the research around retirement focuses on the period before retirement rather than on the management of post-retirement events.

The research has served to identify a number of areas where current policy serves as a barrier to effectively meeting the needs of the elderly. While the project is not directly focused on policy, it is anticipated that this work will be helpful in providing a more complete picture to policymakers, and that it will inform policymaking. It should also serve as a resource for those who are building tools for personal retirement planning and those who are assisting plan sponsors in making decisions.

Issues with Regard to the Frail Elderly

Care for the frail elderly is a major problem for which no solution is in place for many families. Long-term care insurance is the private sector insurance solution to financing part of the care, whereas Medicaid is a public sector solution for the poor. Elderly women living alone are most likely to need such care on a paid basis. In Chapter XV, "Retirement and Health: Estimates and Projections of Acute and Long Term Care Needs of the U.S. Elderly Population," Eric Stallard presents key summary U.S. data on expected costs of care over a lifetime.

He estimates that the discounted present value of future health care costs at retirement is $150,000 – $182,000, with Medicare paying about 50%-55% under current law. Chapter 15 contains a wealth of information and includes projections of the disabled population, plus cost projections for medical care and long-term care. Health care costs are much less of a concern to the individual in Canada because of much more extensive public benefits, and much lower

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residual needs over the public benefits. Health care is a long-term public policy issue in many countries including the U.S. and Canada.

Only 7% of long-term care is paid for by private insurance. The individual and Medicaid are the largest payers. This data provides a great deal of information on the continuum with regard to individual health status and the status of the population. The data provides insights with regard to the frail population and those who could qualify for benefits under a long-term care policy qualified under HIPAA and those who could not. In the U.S., long-term care insurance has been sold for a number of years, but it covers only a small percentage of the population and a small percentage of total care. Insured claims data is not mature, and benefits are only provided for the most severely disabled individuals. The National Long-Term Care survey, presented in the study, is representative of the total population. Several waves of the study have been completed. One of the challenges for actuaries is resolving how to use the national and insured data together.

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Chapter XV provides information on modeling of the frail population and their costs. Chapter VIII, "Analysis of Financial Needs in Retirement, A Multistate Approach" by Bruce L. Jones, also provides information on modeling the disabled elderly population. He presents a model for looking at four stages in retirement. Both presentations use a Markov chain model.

Modeling, Practical Issues and Integration

Models are the tools that permit application of observed, or hypothetical, relationships. At an early stage of development, they offer some insights, but may not be very practical. With further development and suitable data, they provide the direct means of practical application. They can also be dangerous if they are accepted as reality without understanding of the underlying assumptions, simplifications, and degree of validation.

Some of the ideas and models presented in the Retirement Needs Framework project will need further development and consideration of practical issues in application. Application requires both additional analysis and acquisition of suitable data.

Models identified and needs for more modeling

- The modeling and analytical approaches applicable to different areas were discussed:
    - (a) Markov chain models to model transitions between different states of health. Both Bruce Jones and Eric Stallard produced models for this purpose.

    (b) Stochastic models of alternative withdrawal and investment strategies to look at differences in the chance of ruin where assets were invested in different ways

    (c) Models of the effectiveness of different annuity payout strategies

    (d) Models linking expected health care costs to different states of health

    (e) Models based on derivatives and investment strategies to analyze different payout strategies

It would be very interesting to see dialogue about these models, refinements to them, and their application. The Health Section may wish to provide a forum for such dialogue. Some of the areas needing further development include the application of multi-state models to analyze the needs of the frail elderly, models of alternative investment and payout strategies, analysis of issues involving annuity vs. alternative forms of distribution, and application of these models by various users.

Integration of different elements of the post-retirement period

This project provides a start at integrating the ideas presented. The changes and discontinuities after retirement are in some cases mutually independent and in others dependent. From the perspective of the insurer, it is possible to consider integrated or separate products. Tradition and regulation probably lead to separate products, but integrated products may do a better job in the future.

However, from the perspective of the individual, a total plan is what is needed. It is important that the events be considered and analyzed on an integrated basis. There are many interconnected issues in individual planning, employee benefit

program design, financial product development, and in setting public policy. In all of these areas, the solutions need to be focused on dealing with multiple needs.

Data

The papers presented focus more on modeling and concepts than on data. Data will be critical to applying these concepts in the real world as they are developed.

Asset modeling

For modeling assets, there are well-established sources of average historical returns on different assets classes. Ibbotson Associates is a frequently used source, and is cited by Ray Murphy in his paper "A Simple Model of Investment Risk for an Individual Investor After Retirement."

It would be a great advance to be able to model a combination of asset classes including traditional investments, annuities and insurance products. Data sources on annuities and insurance products will be a challenge. Piggott and Doyle, in their paper "Annuity Payout Streams: An Analytic Survey," also point to the problems of market risk on annuities, and our data will need to reflect that.

Frail elderly and long-term care

Both population data and information on long-term care insurance help us focus on issues related to the frail elderly. Eric Stallard provides insights on the National Long-Term Care Survey. This is an extremely valuable data source on frailty within the U.S. population. This data is very helpful in looking at transitions between different health states, or steps in the continuum. This is a periodic study, and the next round is in the planning stage.

There are questions about how to integrate this data with insured data and apply it to insurance. Additionally, it would be quite interesting to have comparative data between countries. Another challenge is how to apply this data to different sub-populations. For example, a Continuing Care Retirement Community or insurer may wish to look at data that is relevant to the particular participants in the group as selected by the entry rules of the program and by the choices of the individuals. Economic status eliminates participation by many.

Data is also being collected on long-term care insurance. This data is very immature, and covers only a small part of the population. One of the key challenges is using this data together with the population-wide data referenced above.

The SOA's Long-Term Care Task Force is working with the data on the frail elderly. Further data will be needed for applications in other models.

Development of regular data resources is important if the models are to be updated regularly. The project group for The Retirement Needs Framework project is further exploring the issue of data that can be published on a regular basis by the SOA for pension and health actuaries.

Other Data

The October 1998 issue of the *North American Actuarial Journal* provides a study of mortality patterns in NAFTA countries and illustrates that there are very different, issues among them. The U.S. and Canada have similar issues, as do many European countries. Mexico is very different and there may be other countries with similar issues. While Mexico is much younger, it will undergo much faster and more dramatic population aging.

The Health and Retirement Survey is a major U.S. longitudinal study of retirement in the population. It looks at a group of people nearing retirement age, and then re-interviews them every two years. Four waves of this study have already been completed. A recent book, *Forecasting Retirement Needs and Retirement Wealth,* 2000, University of Pennsylvania Press, provides substantial insights into the findings from this data. The book provides research developed under the auspices of the Pension Research Council and is edited by Olivia S. Mitchell, P. Brett Hammond, and Anna M. Rappaport. This data is publicly available and is a major resource for further research on the period before and after retirement. One of the key issues at the time of retirement is decision making by the individual. This database provides information on how recent retirees have been making these decisions. The database also includes personal information about assets, health, and data on pension plans and Social Security.

Conclusion

The Retirement Needs Framework project raises many issues for society in general and for professionals working with retirement programs. It presents challenges for research, data collection, planning for individuals, and for policy.

It is hoped that this work will encourage the various groups involved in building better retirement systems to address some of these issues.

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