Financial Risk and Health Care for the Elderly

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The Actuarial Profession and Social and Economic Development

• Central theme of IAA Hong Kong Colloquium
• Social and economic development are great
• But...
• Social and economic progress may conflict
• Will social development through health care impede economic development elsewhere?
• International importance
• A role for the Actuarial Profession
Presentation Overview

• Health care and age
• Health care in USA for older Americans
• Actuarial models of cost
• Managing the risk
• Expanding the actuarial model
• Economic sustainability
• Possible futures amid Uncertainty
Success in Health Maintenance

• Problems of human health addressed
  – Understanding and knowledge
  – Infrastructure of public health
  – Technique and technology, including drugs

• Average lifetime extends to 80 years

• Presents evolving challenges
  – New health care needs
  – Financing health care in retirement
Actuarial Challenge

• Actuaries must help meet this challenge

• Combining the skills and experience of:
  – Health practitioners
  – Pension practitioners
  – Life practitioners

• Along with:
  – Risk management techniques
  – New studies and models
  – Compassion for end-of-life dilemmas
  – Attention to economic tradeoffs
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Ages of Man

• Shakespeare:
  “One man in his time plays many parts,
  His acts being seven ages.”

• Actuary/Economist: Three stages
  – Non-productive youth & education
  – Productive working years
  – Retirement (non-productive)

• Traditional Stages of Life
  – Childhood
  – Adulthood
  – Old Age

• Civilized/Developed World Ideal
  – Retirement before entry to Old Age
Health Care in the Last Stage

• How to finance it
• USA’s approach appears unsustainable
• Global problem

• Active Retirement?  Working Retirement?
• A Problem and an Answer?
Financing Health Care in Retirement in the USA

• Income support’s three-legged stool
  – Social Security
  – Employment pensions & savings plans
  – Individual retirement savings

• Is there a comparable health care support system?
  – Medicare
  – Employer group health plans
  – Individual savings for health
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Financing Health Care in Retirement in the USA

• Medicare
  – In 2008 Medicare covered 45 million Americans
  – 15% of the population of 304 million
  – Paid $469 billion, 20% of $2.3 trillion U. S. spend

• But Medicare’s Hospital Trust Fund
  – Expected to be depleted within ten years
  – Before any baby boomers has reached age 75

• And Medicare has significant gaps
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Financing Health Care in Retirement in the USA

• Employer coverage of current Medicare gaps

• Employer coverage for retirees is diminishing
  – Hewitt – In 1991 87% offered coverage; in 2001 73%
  – Hewitt – In 1991 27% paid all; in 2001 3%
  – Towers – in 1989 65% offered coverage, in 2009 47%

• Employer coverage for retirees is being limited
  – Eligibility restricted
  – Employer liability capped, shifting to retirees
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Financing Health Care in Retirement in the USA

• Individual coverage of current Medicare gaps

• Individual coverage through insurance
  – Medigap policies exist
  – Fidelity 2007: Couple age 65 needs $215,000
  – CRS 2007:
    • Median Age 55-64 retirement balance $100,000
    • Median Age 65+ retirement balance $60,800

• Health care is biggest concern of half retirees
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Actuarial models
projecting long term health care costs

• Government model for Medicare (and SS)
• Private sector models for employee benefits
• Insurers not going long term
• What about other countries?
• Possible futures
• Nominal versus Real costs & benefits
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What are the Risks to Social and Economic Development?

“Are you sure this ice floe is going to pass by the nursing home?”
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Expanding the Actuarial Role in Social and Economic Development

• Not only projecting costs
• Quantifying value
• Identifying sources of productivity
• Identifying risk in Uncertainty
• Managing the risk
Elements of Risk Management

- Define objectives of risk transfer (pooling) system
- Identify participants/stakeholders
- Establish risk appetite/ tolerance
- Evaluate risk mitigation alternatives
- Maintain timely, effective feedback
What are the HC risks?

• Lack of financing for HC
  – Stopping social development
  – Risk A

• Too much financing for HC
  – Stopping economic development
  – Risk Z

• Many risks from A to Z
Risk A

• Health care not available
  – Individual – Deteriorating abilities & satisfaction
  – Employer – Lost productivity (retirees?)
  – Governments – Loss of resource base (tax & workers)

• Promise not kept
  • By insurer/employer/governments
  • HC providers not satisfied
  • Loss of trust > loss of liquidity > insolvency

• Lower Standard of Living
Risk Z

- Too many resources diverted to HC
- Fewer non-HC workers/resources
- Innovation diminished
- Higher HC factor in other goods/services
- Uncompetitive pricing
- Lower Standard of Living
  - (in absence of productivity gains)
Social & Economic Development at Jeopardy?

- Can risk transfer be implemented?
- What are the objectives of risk transfer?
- Who are the affected stakeholders?
- Who might take on the risk?
- How can we mitigate the risk?
- How do we know we are successful?
Objectives of Risk Transfer

- Keep HC available
- Relieve financial burden of catastrophic care
- Finance productivity of healthy worker
  - Particularly HC providers
- Equitable transfer across generations
  - Inevitable intergenerational demands
  - Not clear when viewing one-year term
- Current payment by all (age rated?)
Stakeholders

• HC Consumers and HC Providers

• Risk poolers and security providers
  – Insurers & administrators
  – Government

• Employers

• Family and acquaintances
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Stakeholders

• Individuals of all ages
• HC providers (goods & services)
• Employers
• Insurers & administrators
• Governments (local and national)
Who has the risk appetite?

- Individuals – Yes, but not all risk
- HC providers - Only short term
- Employers - Maybe
- Insurers - Yes, but mandate

- Society (?), Taxpayer, Government
Risk Mitigation Alternatives

• Individual’s responsibility – diet, exercise, etc.
• Health care providers
  – Professional (stay informed)
  – Do no harm
  – Recognize limits
• Insurer – spread risk, create incentives
• Administrator – avoid unnecessary treatments
• Local government – healthy environment
• Employer – healthy work place
Risk Mitigation Alternatives

• Employers and governments have responsibility to facilitate risk-sharing of the unhealthy and healthy

• All have responsibility to “nudge” individuals towards healthy behaviors.
What is Actuarial Role?

• Timely, effective feedback

• Pricing and reserving

• Modeling of risk across:
  – Individuals
  – Groups
  – Ages
  – Time (generations)
Modeling the Dynamics of Health Care

• Building the model
• Decrements
• Current HC cost factors
• Future utilization and cost  
  – Aging  
  – Trend
• Value of promise
Expanding the Model

• Improving actuarial feedback to risk managers

• Valuation in face of Uncertainty

• Declining commitment

• Discount rate/Termination decrement

• Does “society” hold obligation?
Longitudinal Studies

- Correlating current status with future health
- Activities of daily living (ADL), risk adjusters
- Correlation between health use year to year
- Longer term correlations with mortality
- Questionable about eventual HC utilization
End-of-Life Costs and Benefits

- Average HC cost much higher in year of death
- US retiree health models
  - Implicitly recognize EOL levels
  - Could recognition be more explicit?
- “Last year of life” model
  - Adam Reese (NAAJ 2000)
  - Shift in mortality table shifts health care cost
  - Lifetime HC spend ~ 15% - 25% in LYOL (Petertil)
- Model backwards from LYOL to HC cost?
Modeling future sources of HC

- What are HC needs in late stages of life?
- Identify likely distribution and timing
- Planning for health care and economic growth
- Matching assets against liabilities
- Employee benefit process in US not sufficient
  - Pension focus on retirement income
  - Retiree Health focus on cost
Modeling future sources of HC

• US retiree health - simple current paradigm
  – Ultimate trend < current trend ~ initial trend
  – Ultimate trend = GDP growth
  – Gradual decline
    • from initial trend
    • to ultimate trend
  – Problem solved?
Modeling future sources of HC

- Problem not solved
- Problem finessed
- Historical trend > historical GDP growth
- Not useful for social & economic development
- For society/economy as a whole
  - Cannot be finessed
  - Examine constraints on supply and demand
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Expanding the Actuarial Role

• Useful for Social & Economic Development

• What resources needed for HC for elderly?

• How many are disabled, need care, can give care?

• Isolate elderly economy?

• What workers are available (not just < age 65)?
Sources of HC for Elderly

• What affects demand for care?
  • Retirement income available?
  • Geographic location?
    • Urban/rural
    • Regional
  • Cultural propensities?
  • Activities of Daily Living

• Numerous (non-actuarial) studies
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End-of-Life Care

- What is needed?
- What is possible?
- Distribution of cost and care
  - Across older population
  - Shakespeare’s 7th stage
- Hospice needs and efficiencies
Longevity

- Relation to HC demand
- Chronic care versus acute care
- Frequency versus severity
- Are periods of limited activity increasing?
- Geriatric specialists
Expanding the Actuarial Model

• Understanding and aggregating for population

• Utilization of goods and services
  – By age
  – By health condition
  – By ?

• With shift in longevity, is health status better marker than age?
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Actuarial Role

• Health – Diversity of elder care
• Pension – Diversity of consumption
• Life
  – Not just annuities & burial insurance
  – Dependent on employment income beyond 65
• Risk Management
• What else?
Actuarial Role

- Health care and Uncertainty
- Health care and Inequality

- Are we ready for this expansion?
- New skills, new areas
- Understanding economics
- ICA in Washington in 2014?