

Insurance Market Behavior and Health Insurance Seminar Syllabus

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The goal of this intensive Seminar is to provide attendees with a thorough understanding of economic behavior of insurance markets, and, to apply this understanding to practical problems of health insurance. The Seminar begins by analyzing characteristic economic market behavior of consumers and insurance companies (Insurance Market Behavior) and the consequences of their behaviors to the feasibility, profitability, and viability of insurance products (Market Failure). Insurance Market Behavior allows us to identify “critical factors” that affect common health insurance products, and, to understand how insurance companies design effective Risk Management Tools to compensate for Market Failure. This behavioral approach to understanding insurance and, more particularly, health insurance, is designed to provide Seminar attendees with a useful theoretical framework and practical conceptual tools needed to design and manage insurance products.

This Seminar covers intermediate to advanced insurance economics and health insurance concepts. I assume that attendees:

- Have mastered basic actuarial mathematics and/or general insurance concepts;
- Have practical experience in insurance companies, insurance consulting firms, or public healthcare programs; and,
- Have an interest in improving their understanding of insurance economics and learning how to apply this knowledge to specific problems of health insurance product development and portfolio management.

Our lectures, projects, and readings assume only a basic knowledge of health care financing and health insurance products, although familiarity with health care, health care financing and private health insurance products in India is helpful.

This is an intensive learning experience, covering a great deal of material. It is equivalent to a full semester at university. A successful attendee will spend as much time in advance preparation and evening work on readings and projects as time spent attending lectures.

Those attendees who choose to become health practitioners will be able to use information from the Seminar as a solid base upon which to build their health insurance skills. However, additional self-study will be needed to become a competent health actuary or health insurance product manager. Attendees are provided with health and

actuarial resource material and web links to help them apply theoretical and conceptual tools discussed during the Seminar to the design and management of a range of health insurance products.

Preparing for the Seminar

This Seminar requires advanced preparation. Attendees should first read this entire syllabus. Immediate attention needs to be given to the **Supply and Demand for Personal Insurance Problem Set** (see Topic 2 for further information) and to key Seminar readings.

Note on Readings: Readings and Lecture Resources from this syllabus are found in the **Readings** folder on the Health Seminar CD that you have received. Files containing these materials are identified in this syllabus by the author's last name and year of publication as indicated in **bold** following each citation.

All Readings are *not* equally important. Completing all material in the **Readings** folder prior to class is always helpful, but the amount of material and time constraints can make this difficult. Readings that truly need your attention *before* each class are **highlighted in red on the syllabus**. I strongly recommend you complete Readings that you were unable to cover before class following the Seminar in order to reinforce what you learn in class. In addition to Readings, the Lecture Resources (they are also in the **Readings** folder) are materials that expand on our lectures. These materials need not be read before class.

The Health Seminar CD also contains a **Product Resources** folder. Many attendees at previous Seminars have told me the materials in this folder are a valuable resource that helped them to bridge the gap between more theoretical Seminar material and many of the practical problems you will face in developing health insurance products. These materials can be read or referred to after the Seminar.

I suggest that you prepare for class as follows.

1. Read **Arrow 1971**, **Pestieau 1994**, and **Stiglitz 1983** for a background on the economic and social points-of-view that are consistent themes throughout the Seminar.
2. Read whatever material that you find necessary to complete the Supply and Demand for Personal Insurance Problem Set. *Completing this Problem Set in advance of class is very important to your learning experience.*
3. Spent time on the key Readings **highlighted in red on the Syllabus**.
4. Review Lecture Resources that you need to in order to gain a basic understanding of the private health insurance products that we will explore in Topic 4.
5. Read or skim as much of the remaining material as you have time for before class begins.

Note on Lecture Notes: A complete set of notes for our lectures are also provided to attendees on their CD in the **Lectures** folder. Lecture Notes on the CD are identified by their syllabus **Topic** reference. Please print your own copy of each day's Lecture Notes and bring them with you to reference and to take notes on during class. I have found that it works best for note taking to print Lecture Notes from PowerPoint as "Handouts" (From "Print What" drop down menu) at 3 slides per page.

Insurance Market Behavior and Health Insurance Seminar Syllabus

Introduction and Seminar Overview Monday - Opening Session

This brief discussion provides an overview of the Seminar syllabus, its structure and learning objectives. Included are an introduction of the instructor and a brief outline of key topics to be presented during the Seminar.

Readings:

1. Seminar Syllabus (**Syllabus**)
2. Howard J. Bolnick resumé (**Bolnick Resumé**)

Note: These two documents are found on the Seminar CD.

PART I – INSURANCE MARKET BEHAVIOR

Topic 1: Risk Shifting Using Insurance Monday – Morning Session

Learning Objectives:

This lecture is an overview of the Insurance Market Behavior structure that we use to understand and analyze risk shifting using insurance. By comparing observed behavior of consumers and insurance companies to concepts of “ideal” private insurance and “ideal” social protection, we discover the fundamental insurance problems that must be understood and resolved for risk shifting using insurance to be feasible. A second key theme introduced in this lecture is the characteristics and problems of risk shifting through public versus private markets. There is a constant tension between proponents of public markets and those favoring private markets. Our objective is to understand the relative performance of each market so that we can better understand when one or the other is the most appropriate solution for covering health risks.

Lecture Presents:

1. Insurance Market Behavior: the unique nature of insurance
2. Structure of “ideal” private and social insurance markets
3. The economic concept of Market Failure and its applicability to insurance
4. Fundamental problems that threaten feasibility and viability of risk shifting using insurance
5. Structural and performance characteristics of public and private markets for insuring health risks
6. When public markets or private markets are most appropriate

Readings:

1. Lecture Notes for **Topic 1 Risk Shifting Using Insurance** (Please make a copy of this Lecture and bring it to class with you. The Lecture is in the **Lectures** folder in the Seminar CD.)
2. Arrow, Kenneth J., "Insurance, Risk and Resource Allocation," Essays in the Theory of Risk-Bearing, Markham, 1971, Chapter 5. (**Arrow 1971**)
3. Pestieau, Pierre, "Social Protection and Private Insurance: Reassessing the Role of Public versus Private Sector in Insurance," The Eighteenth Annual Lecture of the Geneva Association, (June 1994). (**Pestieau 1994**)
4. Stiglitz, Joseph E., "On the Theory of Social Insurance", The Geneva Papers on Risk and Insurance, 8 (No. 27, April 1983), 105-110. (**Stiglitz 1983**)

Lecture Resources (Optional Additional Readings):

1. Feldstein, Martin, "Rethinking Social Insurance," National Bureau of Economic Research Working Paper 11250, March 2005. (**Feldstein 2005**)
2. Wagstaff, A., "Social Health Insurance Reexamined", World Bank Policy Research Working Paper 4111, January 2007. (**Wagstaff 2007**)

Topic 2: Insurance Market Behavior and Market Failure

Monday – Afternoon Session

Tuesday – All Day

Wednesday – Morning Session

Learning Objectives:

Behavioral interactions between customers and insurance companies in private health insurance markets (Insurance Market Behavior) cause actual insurance offerings to fall short of an "ideal" and create inherently unstable markets: That is, insurance markets sometimes fail to form and at other times they fail to thrive. Economists refer to these problems as "Market Failure". Topic 2 is a series of 4 lectures that explore Insurance Market Behavior and Market Failure. Insurance Market Behavior relates market structure, consumer behavior, and insurance company behavior to explain why Market Failure is so characteristic of insurance markets. We discuss how different public and private market structures create different Market Failure problems. We then learn how insurance companies and public risk bearers develop and use effective Risk Management Tools to compensate for the causes of Market Failure. Lastly, we explore in greater depth the problems that insurance companies face in obtaining useful information to make insurance feasible and the potential negative consequences of some Risk Management Tools.

Lectures Present:

1. How consumers decide whether or not to buy insurance
2. Market structure, consumers, and insurers --- how they interact and behave under various market structures (Insurance Market Behavior)
3. Fundamental problems that cause insurance Market Failures

4. Risk Management Tools and how they provide solutions to insurance Market Failures
5. Feasibility problems that threaten the viability of insurance products
6. Risk classification and risk rating considerations and issues
7. Public social insurance programs, private insurance (individual and group), or mixed markets --- which market structure performs best under various circumstances

Readings:

1. Lecture Notes for:
 - a. **Topic 2A Insurance Purchasing Behavior and Market Failure: Markets with Asymmetric Information**
 - b. **Topic 2B Insurance Company Responses to Consumer Behavior**
 - c. **Topic 2C Feasibility of Insurance**
 - d. **Topic 2D Market Structure and Insurance Market Behavior**
2. Bolnick, Howard J., "Principles of Risk and Insurance for the Medical Leader," Chapter 3 in Thriving in Capitation. (American College of Physician Executives: 1999). **(Bolnick 1999)**
3. "Rethinking Thinking", The Economist (December 18, 1999) pp. 63–65 **(Economist 1999)**
4. Pauly, Mark V., "The Economics of Moral Hazard: Comment," The American Economic Review. vol. 58, no. 3, part 1 (June 1968), pp.531-2. **(Pauly 1968)**
5. Bolnick, Howard J., "Small Business Health Insurance Market Structure: Improving Prospects for Effective Reform," Health Insurance Options: Reform of Private Health Insurance. Hearings before the Subcommittee on Health of the Committee on Ways and Means, U.S. House of Representatives. May 2 and 23, 1991 (Serial 102-34, U.S. Government Printing Office), pp. 293-313. (A copy of the author's manuscript is provided) **(Bolnick 1991)**
6. Schmit, Joan T., "A New View of the Requisites of Insurability," The Journal of Risk and Insurance. Vol. 53, no. 2 (June 1986). **(Schmit 1986)**
7. Cummins, J. David, Smith, Barry D., Vance, R. Neil and VanDerhei, Jack L., "Fairness in Risk Classification", chapter 5 in Risk Classification in Life Insurance. (Kluwer-Nijhoff, Boston: 1983). **(Cummins 1983)**

Lecture Resources (Optional Additional Readings):

1. Rothschild, Michael and Stiglitz, Joseph, "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information," Quarterly Journal of Economics. Vol. 90 (November 1976). **(Rothschild and Stiglitz 1976)**
2. Kahneman, Daniel and Tversky, Amos, "Prospect Theory: An Analysis of Decision Under Uncertainty," Econometrica. Vol. 47, No. 2 (March 1979). **(Kahneman and Tversky 1979)**
3. American Academy of Actuaries Issue Brief, Risk Classification in Voluntary Individual Disability Income and Long-Term Care Insurance. Winter 2001. **(AAA 2001)**
4. Doherty, Neil H., "Portfolio Theory and Risk Management", Chapter 2 in Corporate Risk Management (McGraw-Hill, New York: 1985). **(Doherty 1985)**

5. Hall, Mark A., "Restricting Insurers' Use of Genetic Information: A Guide to Public Policy", North American Actuarial Journal. Vol.3, No.1 (January 1999), pps. 34-51. **(Hall 1999)**
6. Murray, Thomas H., "Genetics and the Moral Mission of Health Insurance", The Hastings Center Report. Vol. 22, No. 6 (1992), Pps. 12-17. **(Murray 1992)**
7. Bykerk, Cecil D., "When Genetic Testing Collides with Major Medical Insurance", Contingencies, March/April 2002 (32-36). **(Bykerk 2002)**

Note: Rothschild and Stiglitz is the seminal economic paper on markets with asymmetrical information. Joseph Stiglitz won the Nobel Prize in Economics in 2001 for this work. It is a very difficult paper to read, but is included here for those of you who are interested in reading this important paper. Ideas developed in the paper are explored using the Problem Set assignment below.

Project: Supply and Demand for Personal Insurance Problem Set.

Market Failure and Insurance Market Behavior of risk bearers and insureds is explored in this Problem Set. The Problem Set uses an Excel worksheet with an embedded utility function to solve insurance problems covering utility theory, partial insurance, markets with asymmetrical information, moral hazard, and characteristics of different market structures. **This Problem Set is an important learning tool covering concepts that are fundamental to an understanding of Market Failure and Insurance Market Behavior. Attendees are expected to complete this assignment before the Seminar begins.** All of the materials for this project can be found in the **Problem Set** folder on your CD. *Please bring a copy of the Problem Set with your answers to class.*

The Problem Set takes four to six hours to complete. Attendees not familiar with Utility Theory will need to spend additional time on the foundation readings cited below in order to do the Problem Set. Feel free to work together with other attendees. Please contact me by email at hbolnick@sbcglobal.net if you find yourself having trouble.

Lecture Topic 2A is based on the Problem Set. I will assume that attendees have successfully completed this assignment, so I use the lecture to build on this important material. Our lecture will be concerned with interpreting results and not with my demonstrating how to find answers to questions. Answers to the Problem Set will be distributed during the lecture.

Materials and foundation resources for this assignment, all of which are in the **Problem Set** folder, include:

1. Supply and Demand for Personal Insurance Problem Set (**Problem Set**),
2. An annotated Excel worksheet used to calculate utilities and expected utilities needed to solve problems (**Utility Program**),
3. Doherty, Neil H., "Risk and Utility: Economic Concepts and Simple Decision Rules," Chapter 3 in Corporate Risk Management. (McGraw-Hill, New York: 1985). **(Doherty 1985)** (Note: this reading ends on page 57.)

4. Bolnick, Howard J., Notes on the Structure of von Neumann - Morgenstern Utility Functions, January, 1997. **(Bolnick 1997)**
5. Friedman, Milton and Savage, L.J., “The Utility Analysis of Choices Involving Risk,” The Journal of Political Economy. Vol. 56, No. 4, (August 1948). **(Friedman and Savage 1948)**

Items 3 through 5 are foundation resources that can be used as needed to provide information on Utility Theory to complete the Problem Set. Readings 3 and 4 should be read first. Reading 5 **(Friedman and Savage 1948)** is the seminal academic work on this subject.

PART II – HEALTH INSURANCE

Topic 3: Health Insurance Environment Wednesday – Afternoon Session

Learning Objectives:

Insurance companies writing health insurance, particularly medical expense reimbursement insurance, operate in a very sensitive environment. Health care, health care financing (public and/or private), and health insurance are universally salient political issues. This lecture provides an overview of health care systems, their goals, structures, and key environmental issues.

Lecture Presents:

1. Cost, quality and access as primary goals for health systems
2. Lessons from a historical look at health economics, market structure, and cultural and political implication of health and healthcare
3. Alternative long-term futures for health, healthcare, and healthcare costs
4. Different mixes of public and private responsibility for health care financing
5. Issues to consider in a country-specific context

Readings:

1. Lecture Notes for **Topic 3 Health Insurance Environment**
2. Bolnick, Howard J., “Designing a World-Class Health Care System”, North American Actuarial Journal. Vol. 7, No. 2 (March/April 2003) **(Bolnick 2003)**
3. Bolnick, Howard J., “A Framework for Long-Term Actuarial Projections of Health Care Costs: The Importance of Population Aging and Other Factors”, North American Actuarial Journal, October 2004. **(Bolnick 2004)**
4. Meier, Kenneth J., “The Politics of Insurance Regulation,” The Journal of Risk and Insurance. vol.53, no. 4 (1991). pps. 700-713. **(Meier 1991)**
5. Arrow, Kenneth J., “Uncertainty and the Welfare Economics of Medical Care,” American Economic Review, Vol. 53, (1963), Pps. 941-973. **(Arrow 1963)**

6. Weisbrod, Burton A., “The Health Care Quadrilemma: An Essay on Technology Change, Insurance, Quality of Care and Cost Containment”, Journal of Economic Literature, Vol.29, No. 2 (June 1991) pps. 523-552. **(Weisbrod 1991)**
7. “The Health of Nations”, The Economist. July 17, 2004. **(Economist 2004)**

Lecture Resources:

1. Overview, Chapter 1 and Chapter 2 from: The World Health Report 2000: Health Systems: Improving Performance, World Health Organization 2000. **(WHO 2000), (WHO 2000a), (WHO 2000b)**
2. Bolnick, Howard J., “The American Experience: A Health Care Reform Odyssey”. Contingencies, July/August 1995, **(Bolnick 1995)**
8. Stiglitz, Joseph E., “Incentives and Institutions in the Provision of Health Care in Developing Countries,” Speech to the IHEA Meetings, Rotterdam, June 1999. **(Stiglitz 1999)**

**Topic 4: U.S. Medicare Prescription Drug Benefit – a Study
of Product Design Problems and Principles
Wednesday – Afternoon Session**

Learning Objectives:

Recent (2003) changes to the U.S. Medicare (old age) health insurance system provide a “real world” example of the Insurance Market Behavior principles and Market Failure problems discussed throughout this Seminar. This is not a lecture. This is a group analysis and discussion of the issues and possible outcomes from U.S. Federal legislation to use private health insurance companies to underwrite Medicare prescription drug coverage for elderly Americans. Attendees will be asked to discuss and decide if a fictitious “insurance company” should choose to offer a prescription drug product subject to the terms and conditions prescribed by the new Medicare law.

Readings:

1. Lecture Notes for **Topic 4 Medicare Prescription Drug Benefit.**

**Topic 5: Private Medical Expense Insurance Products
Thursday – All Day
Friday - All Day**

NOTE: A selection of material from this topic will be chosen to supplement presentations by guest faculty members.

Learning Objectives:

This topic explores various types of private medical expense insurance products, including Voluntary Health Insurance (VHI) products offered in nations with social

health insurance systems. Insurance Market Behavior is used to identify critical factors throughout the Actuarial Control Cycle that characterize product design and portfolio management. This analysis emphasizes the importance of considerations other than technical actuarial work to the successful introduction and management of medical expense insurance product portfolios. The lectures include a description of the current state of managed care in the U.S. and its lesson for other countries, and, a discussion of financial management (pricing, reserving, and financial forecasting) for medical expense insurance portfolios.

Lectures Present:

1. A comparison of health insurance products to other insurance products (life insurance, pensions, general insurance)
2. An overview of market considerations particular to health insurance
3. Overview of key private medical expense insurance products from around the world
4. Critical factors to successfully managing a portfolio of medical care expense insurance products
5. An overview of managed care as it has developed in the U.S., it's successes and failures, and its potential in Croatia
6. Overview of standard actuarial practices in pricing, reserving and capital adequacy
7. Analysis of reasons for medical expense insurance underwriting cycles

Readings:

1. Lecture Notes for **Topic 5 Medical Expense Insurance – VHI**
2. Paul, David, "Private Insurance Alongside Public Policy", The Actuary, November 2000. **(Paul 2000)**
3. Mossialos, Elias and Thomson, Sarah M.S., "Voluntary Health Insurance in the European Union", London School of Economics Health and Social Care Discussion Paper No.19. May 2001. **(Mossialos 2001)**
4. Bolnick, Howard J., "Managed Care", Contingencies, May/June 2001. **(Bolnick 2001)**
5. Bolnick, Howard J. and Resnick, Lindsay R., "The Changing Health Insurance Marketplace", Contingencies, November/December 1996 **(Bolnick and Resnick 1996)**
6. Mulligan, Deanna; Shapiro, Mark; Walrod, David, "Risk Management Strategy", The Actuary, November 1999. **(Mulligan 1999)**
7. Annual Review of Public Health 2001, Vol. 22:273-91. **(Erdmann & Wilson 2001)**
8. Robinson, James C., 2001, "The End of Managed Care", The Journal of the American Medical Association. Vol. 285, No. 20 (May 23, 2001) **(Robinson 2001)**
9. Pauly, M.V., Zweifel, P., et. al., "Private Health Insurance in Developing Countries", Health Affairs. Vol. 25, no. 2, 2006. **(Pauly 2006)**

10. Dreschler, D., and Jütting, J., “Private Health Insurance for the Poor in Developing Countries”, OECD Policy Insights. No. 11, 2005. **(Dreschler 2005)**
11. Grossman, Joy M. and Ginsburg, Paul B., 2004, “As the Health Insurance Underwriting Cycle Turns: What Happens?”, Health Affairs. Vol. 23, No. 6 (November/December). **(Grossman & Ginsburg 2004)**
12. Carey, John. “Medical Guesswork”, Business Week. May 29, 2006. **(Carey 2006)**

Lecture Resources:

1. Health Insurance Association of America, “Group Medical Coverages”, Chapter 2 from Group Life and Health Insurance Part A Fifth Edition (HIAA 1994). **(HIAA Medical)**
2. Fox, Peter D., “An overview of Managed Care”, Chapter 1 from The Managed Health Care Handbook, Third Edition edited by Peter R. Kongstvedt (Aspen Publishers, Inc., 1996). **(Fox 1996)**
3. Wagner, Eric R., “Types of Managed Care Organizations”, Chapter 3 from The Managed Health Care Handbook, Third Edition edited by Peter R. Kongstvedt (Aspen Publishers, Inc., 1996). **(Wagner 1996)**
4. Drake, David F. “Managed Care: A Product of Market Dynamic”, JAMA, February 1997 (vol.277, no. 7). **(Drake 1997)** Doran, Phyllis and Dobson, Robert H., Financial Management of Health Insurance, Society of Actuaries Study Note 8GM-200-00 **(Dobson and Doran SoA)**
5. Lloyd, John C., Health Reserves, Society of Actuaries Study Note, 8GM-305-00. **(Lloyd SoA)**
6. Lachance, Michael D., Reinsurance for Accident & Health Insurance. Society of Actuaries Study Note 8GM-304-00. **(Lachance SoA)**
7. Martin, K.E., Rogal, D.L., Arnold, S.B., Health-Based Risk Assessments: Risk Adjusted Payments and Beyond. Academy Health (January 2004). **(Martin 2004)**
8. Lynch, Robert G., “Gerbils on Espresso: A Better Way to Calculate IBNR Reserves With Low Variance”, Contingencies. January/February 2004. **(Lynch 2004)**
9. Lane, W.R., “The Art and Science of Pricing Small Group Medical Schemes: Initial Pricing Schemes” Health Section News, No. 30 (December 2000) Society of Actuaries, p.1. **(Lane 2000)**
10. Lane, W.R., “The Art and Science of Pricing Small Group Medical Schemes: Renewal Pricing” Health Section News, No. 40 (April 2001) Society of Actuaries, p.12, **(Lane 2001)**
11. Lane, W.R., “The Art and Science of Pricing Small Group Medical Schemes: From Debits to Risk Factors” Health Section News, No. 45 (April 2003) Society of Actuaries, p.26. **(Lane 2003)**
12. Brink, Stephen D.; Modaff, James, C.; Sherman, Steven J., “Variation by Duration in Small Group Medical Claims”, Transactions of Society of Actuaries - Reports, 1991-1992, pps. 333 – 381. **(Brink 1991-92)**
13. Bolnick, Howard J., “Why Small Group Programs Fail”, Best’s Review Life/Health Edition. (Vol. 84, No. 8), October 1983. **(Bolnick 1983)**
14. Bolnick, Howard J., “A Shock to the System” Contingencies, January/February 2005, pps. 17-24. **(Bolnick 2005)**

Note: Lecture Resources 2, 3 and 4 are background readings for attendees not familiar with managed care and managed care organizations.

Product-Specific Education Resources

This list contains health insurance education material used by the Society of Actuaries and the Faculty and Institute of Actuaries in their basic and continuing education programs. Materials can be ordered on-line from these two associations. Material with author noted in **bold** in on our Seminar CD-ROM in the **Product Resources** folder.

Health Insurance (General)

1. Dranove, David, The Economic Evolution of American Health Care, Princeton University Press (Princeton and Oxford, 2000).
2. Bluhm, W.F. editor, Group Insurance (Third Edition), Society of Actuaries, 2000.
3. Society of Actuaries Study Note 8GM-207-00, An Examination of Credibility Concepts
4. Haberman, Steven and Pitacco, Ermano, Actuarial Modeling for Disability Insurance. (Order reference TBACMODILI from the Faculty and Institute of Actuaries).
5. "Required Surplus for the Insurance Risk for Certain Lines of Group Insurance", TSA XXXVI, pp. 9 – 34.
6. Providing Universal Access in Voluntary Private-Sector Markets, American Academy of Actuaries Public Policy Monograph, February 1996. (**AAA 1996**)
7. American Academy of Actuaries Health Practice Notes. (**AAA Health Practice Notes**)
8. U.S. Health Actuarial Standards of Practice. (**US Health ASOP**)
9. The OECD Health Project, Private Health Insurance in OECD Countries, (OECD: 2004)

Income Protection Insurance

1. Elliot, Sue, Income Protection Insurance, The Faculty and Institute of Actuaries, 2001.
2. Petruzzi, Barry J. and Shaw, Stuart J., Society of Actuaries Study Note 8G-600-00, Group Disability Insurance (Petruzzi and Shaw SoA)
3. Waldron, Charles M., "Trends in Morbidity", The Actuary, June 2003. (**Waldron 2003**)

Long Term Care Insurance

1. Fulks, Debra L. and Klever, David M., Society of Actuaries Study Note 8G-502-00, Group Long-Term-Care Topics
2. Litow, Mark E., Society of Actuaries Study Note 8G-601-00, Pricing Long Term Care

Supplemental Health Insurance Products

1. Watthey, Debbie, Critical Illness Cover, The Faculty and Institute of Actuaries, 2001.
2. Reich, Herschel, Society of Actuaries Study Note 8GM-102-00, Dental Coverages (Reich SoA)

Voluntary Health Insurance

1. Alexander, David; Hilary, Neil and Shah, Shrootin, Private Medical Insurance, The Faculty and Institute of Actuaries, 2001.
2. Private Medical Insurance Practitioners Guide. The Faculty and Institute of Actuaries, October 2000. **(PMI Guide 2000)**

Medical Expense Insurance

1. O'Grady, Francis T. (editor), Individual Health Insurance, Society of Actuaries 1988.
2. Society of Actuaries Study Note 8GM-206-00, Variation by Duration in Small Group Medical Insurance Claims
3. Society of Actuaries Study Note 8GM-304-00, Reinsurance for Group Accident & Health Insurance
4. Bluhm, W.F., "Cumulative Anti-Selection Theory", TSA XXXIV, pp. 215-246 **(Bluhm 1982)**
5. Sutton, H.L. & Sorbo A.J., Actuarial Issue in the Fee-for Service/Prepaid Medical Group (Second Edition), 1993.
6. Christianson, J.B., Parente, S.T., Taylor, R., "Defined-Contribution Health Insurance Products: Development & Process", Health Affairs. Vol. 21, No. 1 (January/February 2002), pps. 49-64. **(Christianson 2002)**
7. Van Beuekom, Ineke; Tonshoff, Silke; de Vries, Han; Spreng, Connor; and Keller, Emmett B., Consumer Choice in Health Care: A Literature Review. RAND Europe, March 2004. **(RAND 2004)**
8. Wachenheim, Leigh, "Variation by Duration in Individual Health Medical Insurance Claims", Society of Actuaries, 2006 **(Wachenheim 2006)**
9. Chadick, C., Campbell, W., and Knox-Seith, F., "Comparison of Incurred But Not Reported (IBNR) Methods", Society of Actuarie, 2009. Report is accompanied by an Excel worksheet identified the same. **(Chadick 2009)**

Managed Care

1. Kongstvedt, P.R., The Managed Care Handbook (Fourth Edition). 2001
2. Ullsperger, Dewayne E.; Freier, Daniel E. and Trygstad, Lynette L., Society of Actuaries Study Note 8GM-202-00, Monitoring and Projecting Pricing Trends in a Managed Care Environment
3. Sutton, H.L. & Sorbo A.J., Actuarial Issue in the Fee-for Service/Prepaid Medical Group (Second Edition), 1993.
4. Peyenson, B., Calculate Risk – A Provider's Guide to Assessing and Controlling the Financial Risk of Managed Care,

Health Actuarial Web Resources

1. Society of Actuaries web site: www.soa.org and the Society of Actuaries Health Section on this site (see the Health tab under Sections & Practice Areas). The library on this web site contains full text historical copies of The Record, Transaction of the Society of Actuaries (TSA), TSA Reports, and North American Actuarial Journal. In particular, The Record contains downloadable transcripts of sessions from SoA meetings. This material is extremely helpful to health actuaries. Answers to specific technical questions may often be obtained from actuarial practitioners through the web site discussion forum. The Health Section page is a direct link to the research, publications, and events sponsored by the large group of health actuaries.
2. American Academy of Actuaries web site: www.actuary.org. The site contains Practice Notes, Standard of Practice and other material related to U.S. health actuarial practice. The site also contains a large body of health material under the “Health” link on its home page
3. Actuarial Society of South Africa web site: www.assa.org.za. South Africa is one of the few countries with a large private health insurance market.
4. Faculty and Institute of Actuaries web site: www.actuaries.org.uk. The Health and Care section of the Social Policy Board contains information on private health insurance products such as income protection and long term care.
5. DAV (Germany) web site: www.aktvar.de. Germany is another country with a large private health insurance market. Their web site is in German, which I do not read, so I cannot tell how much useful material is on it.
6. America’s Health Insurance Plans web site: www.ahip.org. AHIP runs excellent basic education courses on health insurance and managed care. While their education materials are not on their web site, someone interested in signing up for courses and ordering education material can do so online. The AHIP web site also contains a pro-private health insurance research and commentary.
7. The International Actuarial Association (IAA) has a Health Section (IAAHS) to meet the needs of health actuaries practicing around the world. Membership in IAAHS is automatically open to all actuaries who are full members of national actuarial associations that are full members of IAA. Membership is also open to individual actuaries and other interested health practitioners who do not meet this automatic membership criterion. Information about IAAHS is on the International Actuarial Association web site (www.actuaries.org) under the “IAAHS (Health)” tab on the home page. IAAHS has an OnLine Journal accessible through the IAA public website. This Journal contains links to information on health insurance and health financing from sources around the world. It is valuable tool for health actuaries and health product specialists.

Other Web Resources

The web contains a tremendous amount of material on health care, health care financing and private health insurance. It is worth your time to explore the web and find your own favorite web sites.