

Health Economics and Health Policy

7MHPH010 – Spring 2012

DEPARTMENT *of* PRIMARY CARE
& PUBLIC HEALTH SCIENCE
KINGS COLLEGE LONDON

Module Booklet

Module: Health Economics and Health Policy
Number: 7MHPH010
Term: Spring 2012
Lectures: Mondays, 10am-1pm
Room: New Hunt's House G.12
Internet: <http://phs.kcl.ac.uk/fbokhari/>

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Course Rationale and Aims

The course is designed to complement other quantitative courses in the programme thereby meeting a perceived demand for increased quantitative skills in the area of health care management and policy. Such skills are increasingly necessary in a sector that is witnessing increased growth in information on both clinical and management aspects of the provision of health care.

To take a comparative approach to the development of health care systems emphasizing present and future policy options and problems.

Course Content

Health Economics. Markets and health care, Market failure in health care; Health insurance models; Incentives in the health care sector; Economic evaluation and health policy decision-making; Theoretical justification for economic evaluation; Equity in health care allocation; International perspectives on health policy

Health Policy. Health care systems: analysis of existing and suggested models of finance and provision; Cross national comparisons and limitations; The state's role in funding and provision of health care; Setting the policy agenda; Private health insurance; Assessing health care reforms.

Course Learning Outcomes

At the end of the course students will have developed an understanding of health economics through looking at the market for health and health care and why economic evaluation proves important in a setting lacking infinite resources. Students will be able to discuss health policy and management issues in light of theoretical underpinnings coming from the study of health economics. Students

will have an understanding of the theoretical foundations of health policy and the practice and application of health policy. They will be aware of the policy choices available and will be able to make international comparisons.

Course Assessment

Course assessment will be in two parts: A written in class exam consisting of 60% of the grade and a term paper worth 40% of the grade. Students must obtain an overall mark of 50% to pass this module.

The exam paper will be divided into two parts: Part A Health Economics, and Part B Health Policy. Students will be required to answer 3 questions in total and at least 1 question from each part. There is a sample exam included at the end of this module booklet. **The provisional exam date is May 9, 2012.**

The term paper should be about 2,500 words, to be submitted no later than 12 noon on **March 28, 2012**. For the term paper, you can select one of the following topics:

- Discuss whether markets fail to provide health care insurance efficiently to individuals.
- Discuss the impact of hospital competition on health care quality.

When submitting your paper you must include the word count at the top of the first page. This word count includes tables and figures but not references.

Course Outline

	Date	Topic
1.	Jan 16, 2012	Introduction to Economics
2.	Jan 23, 2012	Production of Health
3.	Jan 30, 2012	Economic Evaluations in Health Care
4.	Feb 06, 2012	Demand for Health and Medical Care
5.	Feb 13, 2012	Introduction to Firms and Markets
6.	Feb 20, 2012	Insurance & Market for Insurance
7.	Feb 27, 2012	Insurance & Market for Insurance (continued)
8.	Mar 05, 2012	Hospitals
9.	Mar 12, 2012	Health Care Professionals
10.	Mar 19, 2012	Pharmaceuticals
11.	Mar 26, 2012	Recap/Capstone

Course texts

There is no single text for this course. Readings will be drawn from multiple sources but largely rely on the following two texts. It is recommended that you purchase these texts.

- (a) **SN:** Santerre, E. R. and Neun, S. P. (2010). *Health Economics: Theories, Insights, and Industry Studies*. South-Western, 5th. edition
- (b) **FGS:** Folland, S., Goodman, A. C., and Stano, M. (2009). *The Economics of Health and Health Care*. Prentice-Hall, Upper Saddle River, New Jersey, 6th. edition

Reading lists

All essential and further readings are available either through the King's College Library or online (on-campus or with ATHENS passwords). For those readings not available online, copies will be made available. Essential readings are those readings which are required. Further reading will give you more information about specific topics and/or provide you with additional resources sometimes explaining the same material as the essential readings but with a different perspective or assumptions about previous reader knowledge.

1. Jan 16, 2012 – Introduction to Health Economics

This introductory lecture will focus main issues in health care economics and will also provide a brief introduction to different health care systems around the globe and issues relating to costs, health care expenditures, and health outcomes. The lecture will also introduce several economic tools which will be used through out the rest of the term so as to better understand the underlying economic issues in health care and policy analysis. Additional economic concepts/topics will be introduced later in the term as we progress through specific topics. The primary reading set for this lecture is given below.

- FGS Chap. 1 – Introduction.
- FGS Chap. 2 (pp. 20-36) – Microeconomic tools for health economics.
- SN Chap. 2 – Health and medical care: An economic perspective.
- FGS Chap. 22 – Comparative health care systems.
- SN Chap. 4 – Health care systems and institutions.
- Additional Readings
 - Kutzin, J. (2001). A descriptive framework for country-level analysis of health care financing arrangements. *Health Policy*, 56(3):171–204
 - Medical care systems worldwide. Chap. 16 in Henderson, J. W. (2009). *Health Economics and Policy*. South-Western, 4th. edition
 - Universal insurance and international comparisons of health care systems. Chap. 16 in Phelps, C. E. (2010). *Health Economics*. Addison Wesley, New York, 4th. edition
 - Pauly, M. V. (2003). Should we be worried about high real medical spending growth in the United States. *Health Affairs*, 22(1):15–27. Web exclusive
 - Catlin, A., Cowan, C., Heffler, S., Washington, B., and the National Health Expenditure Accounts Team (2007). National health spending in 2005: The slowdown continues. *Health Affairs*, 26(1):142–153
 - Bokhari, F. A. S., Gai, Y., and Gottret, P. (2007). Government health expenditures and health outcomes. *Health Economics*, 16(3):257–273

2. Jan 23, 2012 – Production of Health

The lecture will include a general discussion of production functions and cost functions and then focus on the production of health and its relation to several inputs such as health/medical care and other inputs. Concepts of efficiency (productive, technical and allocative) will also be introduced within the health care context.

- FGS Chap. 6 (pp. 111-131) – The Production, cost, and technology of health care.

- SN Chap. 7 – Medical care production and costs.
- Cutler, D. M. and McClellan, M. (2001). Is technological change in medicine worth it? *Health Affairs*, 20(5):11–29
- Newhouse, J. P. (1992). Medical care costs: How much welfare loss? *Journal of Economic Perspectives*, 6(3):3–21
- McClellan, M., McNeil, B., and Newhouse, J. P. (1994). Does more intensive treatment of acute myocardial infarction in the elderly reduce mortality? analysis using instrumental variables. *Journal of the American Medical Association*, 272(11):859–866
- Additional Readings
 - Fuchs, V. R. (2004). Perspective: More variation in use of care, more flat-of-the-curve medicine. *Health Affairs*. Web exclusive
 - Schoder, J. and Zweifel, P. (2009). Flat-of-the-curve medicine a new perspective on the production of health. Working Paper 0901, Socioeconomic Institute - University of Zurich

3. Jan 30, 2012 – Economic Evaluations in Health Care

This lecture will provide an overview of different methods used to evaluate medical interventions. The basic analytical framework of economic evaluation is presented, as well as the different analytical tools available, and technical parameters that should be taken into consideration. Special attention is paid to cost benefit and cost effectiveness analysis.

- SN Chap 3 – Cost and benefit analysis.
- FGS Chap 4 – Economic efficiency and cost benefit analysis.
- Additional Readings
 - Robinson, R. (1993e). Economic evaluation and health care. what does it mean? *British Medical Journal*, 307(6905):670–673
 - Robinson, R. (1993d). Costs and cost-minimisation analysis. *British Medical Journal*, 307(6906):726–728
 - Robinson, R. (1993b). Cost-effectiveness analysis. *British Medical Journal*, 307(6907):793–795
 - Robinson, R. (1993c). Cost-utility analysis. *British Medical Journal*, 307(6908):859–862
 - Robinson, R. (1993a). Cost-benefit analysis. *British Medical Journal*, 307(6909):924–926

4. Feb 6, 2012 – Demand for Health & Medical Care

We will focus on health as a investment and a consumption good and how it leads to demand for medical care. Topics covered will be the labor-leisure trade-offs, investment over time, investment and consumption aspects of health and Grossman’s health capital model.

- FGS Chap. 7 – Demand for health capital.
- SN Chap. 5 (pp.110-115 & 122-132) – The demand for medical care.
- Additional Readings
 - Grossman, M. (1972). On the concept of health capital and the demand for health. *Journal of Political Economy*, 80(2):223–255

5. Feb 13, 2012 – Introduction to Firms and Markets

This lecture will provide an introduction to how firms engage in a market. In particular, how they set prices and output under different forms of competition.

- SN Chap. 8 – Structure, conduct, performance, and market analysis.
- Additional Readings
 - Gaynor, M. S. and Haas-Wilson, D. (1999). Change, consolidation and competition in health care markets. *Journal of Economic Perspectives*, 13(1):141–164
 - Robinson, J. C. and Luft, H. S. (1985). The impact of hospital market structure on patient volume, average length of stay, and the cost of care. *Journal of Health Economics*, 4:333–356

6 & 7. Feb 20-27, 2012 – Insurance & Market for Insurance

The concept of risk and insurance will be introduced. Key topics covered will include risk aversion, demand and supply of insurance, impact of insurance on demand for medical care and moral hazard. The lecture will also introduce the concept of asymmetric information and adverse selection in health insurance markets. Finally, we will look at the organization of health insurance markets. This lecture will continue over two classes.

- FGS Chap. 8 – Demand and supply of insurance.
- SN Chap. 6 (pp. 142-162) – The demand for medical insurance: traditional and managed care coverage.
- FGS Chap. 10 (pp. 199-206) – Asymmetric information and agency.
- FGS Chap. 11 – The organization of health insurance markets.
- SN Chap. 11 – The private health insurance industry.
- How much insurance should everyone have? Chap. 6 in Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition
- Manning, W. G., Newhouse, J. P., Duan, N., Keeler, E. B., Leibowitz, A., and Marquis, M. S. (1987). Health insurance and the demand for medical care: Evidence from a randomized experiment. *American Economic Review*, 77(3):251–277
- Additional Readings
 - Pauly, M. and Nichols, L. (2002). The nongroup insurance market: Short on facts, long on opinions and policy disputes. *Health Affairs*, 21(6). Web exclusive
 - Pauly, M. V. (1968). The economics of moral hazard: comment. *American Economic Review*, 58(3):531–537
 - Manning, W. G. and Marquis, M. S. (1996). Health insurance: The tradeoff between risk pooling and moral hazard. *Journal of Health Economics*, 15:609–639
 - Claxton, G. (2002). How private insurance works: A primer. Technical Report 2255, The Henry J. Kaiser Family Foundation
 - Claxton, G. and Lundy, J. (2008). How private insurance works: A primer – 2008 update. Technical Report 7766, The Henry J. Kaiser Family Foundation
 - Ellis, R. P. and McGuire, T. G. (1993). Supply-side and demand-side cost sharing in health care. *Journal of Economic Perspectives*, 7(4):135–151

8. Mar 5, 2012 – Hospital Service and Market for Hospital Services

Hospital as a firm and the hospital service industry will be discussed in this lecture. Special attention will be paid to hospital structure, non-for profit firms and how they differ from for-profit firms. We will also focus on issues relating to competition and regulation in the hospital industry.

- SN Chap. 13 – The hospital services industry
- Competition among hospitals: does it raise or lower costs? chap. 15 in Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition
- Gaynor, M., Moreno-Serra, R., and Propper, C. (2011). Death by market power reform, competition and patient outcomes in the National Health Service. CMPO Working Paper Series 10/242, Centre for Market and Public Organisation, University of Bristol
- Cooper, Z., Stephen Gibbons, a. J., and McGuire, A. (2011). Does hospital competition save lives? evidence from the English NHS patient choice reforms. *Economic Journal*, 121(554):228–260
- Additional Readings
 - FGS Chap. 13 – Nonprofit firms.
 - Cost shifting, Chap. 17 in Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition
 - Newhouse, J. P. (1970). Toward a theory of nonprofit institutions: An economic model of a hospital. *American Economic Review*, 60(1):64–74
 - The market for hospital services. Chap. 9 in Henderson, J. W. (2009). *Health Economics and Policy*. South-Western, 4th. edition
 - The hospital as a supplier of medical care. Chap. 8 in Phelps, C. E. (2010). *Health Economics*. Addison Wesley, New York, 4th. edition
 - Hospitals in the market place. Chap 9. in Phelps, C. E. (2010). *Health Economics*. Addison Wesley, New York, 4th. edition
 - Do nonprofit hospitals behave differently than for-profit hospitals? Chap 14. in Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition
 - Pollock, A., Macfarlane, A., Kirkwood, G., Majeed, F. A., Greener, I., Morelli, C., Boyle, S., Mellett, H., Godden, S., Price, D., and Brhlikova, P. (2011b). No evidence that patient choice in the NHS saves lives. *Lancet*, 378(9809):2057–2060
 - Bloom, N., Cooper, Z., Gaynor, M., Gibbons, S., Jones, S., McGuire, A., Moreno-Serra, R., Propper, C., Reenen, J. V., and Seiler, S. (2011). In defence of our research on competition in England’s National Health Service. *Lancet*, 378(9809):2064–2065
 - Pollock, A., Macfarlane, A., Kirkwood, G., Majeed, F. A., Greener, I., Morelli, C., Boyle, S., Mellett, H., Godden, S., Price, D., and Brhlikova, P. (2011a). In defence of our research on competition in England’s National Health Service Authors’ reply. *Lancet*, 378(9809):2065–2066

9. Mar 12, 2012 – Physician Services and Market for Health Care Professionals

Physicians are central to provision of health care. This lecture will focus on the role of physician as in input to health production, market for physician services and issues of physician services industry.

- FGS Chap. 16 – Health care labor markets and professional Training.

- SN Chap. 12 – The physician services industry.
- In whose interest does the physician act? Chap. 4 in Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition
- Pauly, M. V. and Redisch, M. (1973). The not-for-profit hospital as a physicians' cooperative. *American Economic Review*, 63(1):87–99
- Additional Readings
 - FGS Chap 15. – The physician's practice.
 - The market for health care professionals. Chap. 8 in Henderson, J. W. (2009). *Health Economics and Policy*. South-Western, 4th. edition
 - Reinhardt, U. E. (1972). A production function for physician services. *The Review of Economics and Statistics*, 54(1):55–65
 - Gaynor, M. S. (1994). Issues in the industrial organization of the market for physician services. *Journal of Economics and Management Strategy*, 39(1):211–255

10. Mar 19, 2012 – Pharmaceutical Industry

The pharmaceutical industry plays an important role in the health economy. New drugs are introduced that improve health outcomes or provide cures to previously uncured diseases. Yet these drugs are introduced at very high prices and are granted patent protection. This lecture will provide an introduction to the pharmaceutical industry and will focus on issues related to R&D, patent protection, entry (new and generic) and regulation.

- FGS Chap. 17 – The Pharmaceutical industry.
- SN Chap. 14 – The Pharmaceutical industry.
- The high price of prescription drugs, Chap. 25 in Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition
- Why are prescription drugs less expensive overseas? Chap. 27 in Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition
- The pharmaceutical industry: a public policy dilemma, Chap. 28 in Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition
- Frank, R. G. (2007). The ongoing regulation of generic drugs. *The New England Journal of Medicine*, 357(20):1993–1996
- Berndt, E. R., Mortimer, R., Bhattacharjya, A., Parece, A., and Tuttle, E. (2007). Authorized generic drugs, price competition, and consumers welfare. *Health Affairs*, 26(3):790–799
- Additional Readings
 - Frank, R. G. and Salkever, D. S. (1997). Generic entry and the pricing of pharmaceuticals. *Journal of Economics and Management Strategy*, 6(1):75–90
 - Rizzo, J. (1999). Advertising and competition in the ethical pharmaceutical industry: The case of antihypertensive drugs. *Journal of Law and Economics*, XLII:89–116
 - Bokhari, F. A. and Fournier, G. M. (2010). Entry in the ADHD drugs market: Welfare impact of generics and me-toos
 - Ling, D. C., Berndt, E. R., and Kyle, M. K. (2002). Deregulating direct-to-consumer marketing of prescription drugs: Effects on prescription and over-the-counter product sales. *Journal of Law and Economics*, 45(S2):691–723

- Berndt, E. R. (2002). Pharmaceuticals in U.S. health care: determinants of quantity and price. *Journal of Economic Perspectives*, 16(4):45–66
- Gemmill, M. C., Thomson, S., and Mossialos, E. (2008). What impact do prescription drug charges have on efficiency and equity? evidence from high-income countries. *International Journal for Equity in Health*, 7(1):12

11. Mar 26, 2012 – Recap/Capstone

This lecture will mostly recap material already covered during the term. However, capstone discussions will be centered around interventions and role of governments.

Sample Exam Questions

Answer 3 questions. One from each section and a further one from either.

Section A

- (a) Giving examples, describe the difference between cost-utility analysis and cost-effectiveness analysis. How might these types of analyses assist in the delivery of efficient health care?
- (b) What is moral hazard? How does moral hazard create problems in the efficient allocation of resources within the health care sector and what policies may be used to remedy these problems?
- (c) Describe two theories that would explain correlation between education and health. In either of these theories, is the relationship between the two variables causal?
- (d) What makes insurance for medical expenditures desirable, as opposed to, say, food or fuel expenditures? Explain also, citing examples, why for some forms of medical expenditures the health insurance market offers deeper/more complete coverage while for other forms it is less complete.

Section B

- (a) “User charges empower patients, reduce frivolous utilization of health services and increase revenue for health care.” Discuss.
- (b) How much should a country spend on health care?
- (c) What is moral hazard? How does moral hazard create problems in the efficient allocation of resources within the health care sector and what policies may be used to remedy these problems?
- (d) In recent years, many countries have adopted Diagnostic Related Group (DRG) based prospective reimbursement system for hospitals. Describe the difference between prospective and retrospective reimbursement systems and discuss implications of different reimbursement methods.

References

- Berndt, E. R. (2002). Pharmaceuticals in U.S. health care: determinants of quantity and price. *Journal of Economic Perspectives*, 16(4):45–66.
- Berndt, E. R., Mortimer, R., Bhattacharjya, A., Parece, A., and Tuttle, E. (2007). Authorized generic drugs, price competition, and consumers welfare. *Health Affairs*, 26(3):790–799.
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- Bokhari, F. A. and Fournier, G. M. (2010). Entry in the ADHD drugs market: Welfare impact of generics and me-toos.
- Bokhari, F. A. S., Gai, Y., and Gottret, P. (2007). Government health expenditures and health outcomes. *Health Economics*, 16(3):257–273.
- Catlin, A., Cowan, C., Heffler, S., Washington, B., and the National Health Expenditure Accounts Team (2007). National health spending in 2005: The slowdown continues. *Health Affairs*, 26(1):142–153.
- Claxton, G. (2002). How private insurance works: A primer. Technical Report 2255, The Henry J. Kaiser Family Foundation.
- Claxton, G. and Lundy, J. (2008). How private insurance works: A primer – 2008 update. Technical Report 7766, The Henry J. Kaiser Family Foundation.
- Cooper, Z., Stephen Gibbons, a. J., and McGuire, A. (2011). Does hospital competition save lives? evidence from the English NHS patient choice reforms. *Economic Journal*, 121(554):228–260.
- Cutler, D. M. and McClellan, M. (2001). Is technological change in medicine worth it? *Health Affairs*, 20(5):11–29.
- Ellis, R. P. and McGuire, T. G. (1993). Supply-side and demand-side cost sharing in health care. *Journal of Economic Perspectives*, 7(4):135–151.
- Feldstein, P. J. (2007). *Health policy issues: an economic perspective on health reform*. Health Administration Press, Washington, D.C., 4th. edition.
- Folland, S., Goodman, A. C., and Stano, M. (2009). *The Economics of Health and Health Care*. Prentice-Hall, Upper Saddle River, New Jersey, 6th. edition.
- Frank, R. G. (2007). The ongoing regulation of generic drugs. *The New England Journal of Medicine*, 357(20):1993–1996.
- Frank, R. G. and Salkever, D. S. (1997). Generic entry and the pricing of pharmaceuticals. *Journal of Economics and Management Strategy*, 6(1):75–90.
- Fuchs, V. R. (2004). Perspective: More variation in use of care, more flat-of-the-curve medicine. *Health Affairs*. Web exclusive.
- Gaynor, M., Moreno-Serra, R., and Propper, C. (2011). Death by market power reform, competition and patient outcomes in the National Health Service. CMPO Working Paper Series 10/242, Centre for Market and Public Organisation, University of Bristol.
- Gaynor, M. S. (1994). Issues in the industrial organization of the market for physician services. *Journal of Economics and Management Strategy*, 39(1):211–255.
- Gaynor, M. S. and Haas-Wilson, D. (1999). Change, consolidation and competition in health care markets. *Journal of Economic Perspectives*, 13(1):141–164.
- Gemmill, M. C., Thomson, S., and Mossialos, E. (2008). What impact do prescription drug charges have on efficiency and equity? evidence from high-income countries. *International Journal for Equity in Health*, 7(1):12.
- Grossman, M. (1972). On the concept of health capital and the demand for health. *Journal of Political Economy*, 80(2):223–255.
- Henderson, J. W. (2009). *Health Economics and Policy*. South-Western, 4th. edition.

- Kutzin, J. (2001). A descriptive framework for country-level analysis of health care financing arrangements. *Health Policy*, 56(3):171–204.
- Ling, D. C., Berndt, E. R., and Kyle, M. K. (2002). Deregulating direct-to-consumer marketing of prescription drugs: Effects on prescription and over-the-counter product sales. *Journal of Law and Economics*, 45(S2):691–723.
- Manning, W. G. and Marquis, M. S. (1996). Health insurance: The tradeoff between risk pooling and moral hazard. *Journal of Health Economics*, 15:609–639.
- Manning, W. G., Newhouse, J. P., Duan, N., Keeler, E. B., Leibowitz, A., and Marquis, M. S. (1987). Health insurance and the demand for medical care: Evidence from a randomized experiment. *American Economic Review*, 77(3):251–277.
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- Newhouse, J. P. (1970). Toward a theory of nonprofit institutions: An economic model of a hospital. *American Economic Review*, 60(1):64–74.
- Newhouse, J. P. (1992). Medical care costs: How much welfare loss? *Journal of Economic Perspectives*, 6(3):3–21.
- Pauly, M. and Nichols, L. (2002). The nongroup insurance market: Short on facts, long on opinions and policy disputes. *Health Affairs*, 21(6). Web exclusive.
- Pauly, M. V. (1968). The economics of moral hazard: comment. *American Economic Review*, 58(3):531–537.
- Pauly, M. V. (2003). Should we be worried about high real medical spending growth in the United States. *Health Affairs*, 22(1):15–27. Web exclusive.
- Pauly, M. V. and Redisch, M. (1973). The not-for-profit hospital as a physicians' cooperative. *American Economic Review*, 63(1):87–99.
- Phelps, C. E. (2010). *Health Economics*. Addison Wesley, New York, 4th. edition.
- Pollock, A., Macfarlane, A., Kirkwood, G., Majeed, F. A., Greener, I., Morelli, C., Boyle, S., Mellett, H., Godden, S., Price, D., and Brhlikova, P. (2011a). In defence of our research on competition in England's National Health Service Authors' reply. *Lancet*, 378(9809):2065–2066.
- Pollock, A., Macfarlane, A., Kirkwood, G., Majeed, F. A., Greener, I., Morelli, C., Boyle, S., Mellett, H., Godden, S., Price, D., and Brhlikova, P. (2011b). No evidence that patient choice in the NHS saves lives. *Lancet*, 378(9809):2057–2060.
- Reinhardt, U. E. (1972). A production function for physician services. *The Review of Economics and Statistics*, 54(1):55–65.
- Rizzo, J. (1999). Advertising and competition in the ethical pharmaceutical industry: The case of antihypertensive drugs. *Journal of Law and Economics*, XLII:89–116.
- Robinson, J. C. and Luft, H. S. (1985). The impact of hospital market structure on patient volume, average length of stay, and the cost of care. *Journal of Health Economics*, 4:333–356.
- Robinson, R. (1993a). Cost-benefit analysis. *British Medical Journal*, 307(6909):924–926.
- Robinson, R. (1993b). Cost-effectiveness analysis. *British Medical Journal*, 307(6907):793–795.
- Robinson, R. (1993c). Cost-utility analysis. *British Medical Journal*, 307(6908):859–862.
- Robinson, R. (1993d). Costs and cost-minimisation analysis. *British Medical Journal*, 307(6906):726–728.
- Robinson, R. (1993e). Economic evaluation and health care. what does it mean? *British Medical Journal*, 307(6905):670–673.
- Santerre, E. R. and Neun, S. P. (2010). *Health Economics: Theories, Insights, and Industry Studies*. South-Western, 5th. edition.
- Schoder, J. and Zweifel, P. (2009). Flat-of-the-curve medicine a new perspective on the production of health. Working Paper 0901, Socioeconomic Institute - University of Zurich.