Health economics

5 module, academic year 2013-2014

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Course information

Course Website: http://my.nes.ru/

Instructor's Office Hours: Tuesday and Thursday, 4-5 p.m. and by appointment Class **Time:**

Room Number:

TAs: [Names and contact information]

Course description

Health Economics is a field which has been rapidly growing in importance, not least because health care spending has been increasing steadily as a proportion of GDP around the world. (In the US some forecast it could reach 20% of GDP by 2015). However, the production of health involves much more than medical care; this course studies both what produces health as well as how we produce health care.
The course will be part theory (building on microeconomic models and applications), part information-intensive and part the analysis of econometric evidence, with a strong (but not exclusive) interest in questions of major policy concern in Russia now. For the information-intensive part, a great deal will be comparative and international, and draw on materials of the OECD, World Bank and WHO. The modeling and the econometrics will draw on both seminal economics articles and - to make it live - recent working papers.
As a result of the course, students are supposed to master the major models, theoretical and empirical, that help to understand health- and healthcare-provision-related behavior of individuals and institutions. The course will give special attention to healthcare organization in the leading countries and the application of cost benefit analysis to healthcare. Problem sets and research projects will accompany lectures and will provide opportunities to master the estimation techniques introduced during lectures.

Course requirements, grading, and attendance policies

Students are assumed to have a background in intermediate microeconomics and basic empirical analysis methods.
There will be 2 problem sets, distributed in the end of week and to be handed in to the teaching assistant in sections a week later.

Additionally, there will be two projects aimed to master your knowledge on healthcare organization on the leading countries and on cost-benefit analysis in healthcare. Everybody will have to choose a topic from a list of 9-10 topics, create a team of 2-3 people, conduct a short research, describe results in a written form and present them on one of the seminars.
There will be a final written closed-book exam given at the end of the module. Problem sets will comprise 15% of the final grade, research projects – another 15%, and the exam will account for 70%.
Students with low attendance rate (less than half lectures and seminars totally) and with less than half home assignments plus projects handed in are NOT ALLOWED for a MAKE-UP EXAM.

Course contents

1. Introduction to health economics. Health and healthcare. Data concepts, measurement problems. Comparative Economics of Health Care Systems: inputs, institutional arrangements and outcomes. Financing health care. National Health Accounts. (2 lectures)

Arrow, Kenneth J. "Uncertainty and the Welfare Economics of Medical Care", *American Economic Review*, Vol. 53, No. 5 (Dec., 1963), pp. 941-973
Docteur, Elizabeth, and Howard Oxley "Health Care Systems: Lessons from the Reform Experience", OECD: DELSA/ELSA/WD/HEA, 2003
Häkkinen, Unto, and Isabelle Joumard (2007) "Cross-country Analysis of Efficiency in OECD Health Care Sections: Options for Research", OECD Economic Department Working Papers No 554, OECD Publishing doi:10.1787/178861806081
Poullier J-P, Hernandez P., Kawabata K. *National Health Accounts: Concepts, Data Sources, and Methodology* in: *Health systems performance assessment: debates, methods and empiricism* / edited by Christopher J.L. Murray, David B.Evans
Chernew, Michael E., and Joseph P. Newhouse (2011) "Health Care Spending Growth" – in Handbook of Health Economics, Vol.2

2. Economics of health production. Demand for medical care. Determinants of health. Mortality factors. (2 lectures)
Grossman, Michael "The Human Capital Model" Ch. 7 in *Handbook of Health Economics, Volume 1, Edited by A.J. Culyer and J.P Newhouse*, 2000, pp.348-408
Grossman, M., "On the Concept of Health Capital and the Demand for Health," *Journal of Political Economy,*80(2), 1972, 223-255.
David Cutler, Angus Deaton, Adriana Lleras-Muney (2006), "The Determinants of Mortality", *Journal of Economic Perspectives,* Summer, pages 97-120.
David Cutler and Elizabeth Brainerd (2005) "Autopsy on an Empire: Understanding Mortality in Russia and the Former Soviet Union," *Journal of Economic Perspectives,* Volume 19, Number 1, Winter, Pages 107-130

3. Health detrimental behavior. Rational addiction: theory and empirical evidence. (2 lectures)
Becker, G., and Kevin Murphy (1988) "A Theory of Rational Addiction" *Journal of Political Economy*, Vol.96, 4, 675-700.
Becker, G., Michael Grossman and Kevin Murphy (1994) "An Empirical Analysis of Cigarette Addiction" *American Economic Review*, Vol.84, 3, 396-418.
Gruber, J, "Tobacco at the Crossroads: The Past and Future of Smoking Regulation in the United States" *Journal* of *Economic Perspectives*, 15, 2001, 193-212

Foster, Martin, and Andrew Jones "The Role of Tobacco Taxes in Starting and Quitting Smoking: Duration Analysis of British Data", *Center for Health Economics Discussion Paper 176*, 2000

4. Production and costs of health care. Supply of health care. Key players in the health care sector. (3 lectures)

Sloan, Frank A. "Not-for-profit Ownership and Hospital Behavior", Chapter 21 in *Handbook of Health Economics, Volume 1, Edited by A.J. Culyer and J.P Newhouse*, 2000, pp.1142-1174
McGuire, Thomas G. "Physician Agency", Chapter 9 in *Handbook of Health Economics, Volume 1, Edited by A.J. Culyer and J.P Newhouse*, 2000, pp.462-536
McGuire, Thomas G., and Mark V.Pauly "Physician response to fee changes with multiple payers", *Journal of Health Economics*, 10, 1991, 385-410
Newhouse, Joseph P. "Toward a Theory of Nonprofit Institutions: An Economic Model of a Hospital", *American Economic Review*, Vol. 60, No. 1 (1970), pp. 64-74
Harris, Jeffrey E. "The Internal Organization of Hospitals: Some Economic Implications", *Bell Journal of Economics*, Vol. 8, No. 2 (Autumn, 1977), pp. 467-482
Dranove, David, and Paul Wehner "Physician-induced demand for childbirths", *Journal of Health Economics*, 13, 1994, 61-73
Gruber, Jonathan, and Maria Owings. "Physician Financial Incentives and Cesarean Section Delivery", *RAND Journal of Economics*, Vol. 27, No. 1 (Spring, 1996), pp. 99-123
Escarce, José J. "Would Eliminating Differences in Physician Practice Style Reduce Geographic Variations in Cataract Surgery Rates?" *Medical Care*, Vol. 31, No. 12 (Dec., 1993), pp. 1106-1118
Louis, Daniel Z., ElaineJ. Yuen, Mario Braga, Americo Cicchetti, Carol Rabinowitz, Christine Laine, and Joseph S. Gonnella "Impact of a DRG-based Hospital Financing System on Quality and Outcomes of Care in Italy", *Health Services Research*, 34:1 (April 1999, Part II)
Fournier, Gary M., and Jean M. Mitchell "Hospital Costs and Competition for Services: A Multiproduct Analysis", *Review of Economics and Statistics*, Vol. 74, No. 4 (Nov., 1992), pp. 627-634
Nyman, John A., and Dennis L. Bricker "Profit Incentives and Technical Efficiency in the Production of Nursing Home Care", *Review of Economics and Statistics*, Vol. 71, No. 4 (Nov., 1989), pp. 586-594
Linna, Miika "Measuring Hospital Cost Efficiency with Panel Data Models" , *Health Economics,* **7**: 415–427 (1998)

5. Measuring efficiency of health care. Economic evaluation of health care interventions. (3 lectures)

Brent Robert J. "Cost–Benefit Analysis and Health Care Evaluations", Edward Elgar Cheltenham, UK, Northampton, MA, USA, 2003
Michael F. Drummond, Mark J. Sculpher, George W. Torrance, Bernie J. O'Brien and Greg L. Stoddart: *Methods for the Economic Evaluation of Health Care Programmes,* Second Edition

6. Equity in healthcare. Health, income and socio-economic status. Inequality in health and in access to healthcare. (2 lectures)

Fleurbaey, Marc and Erik Schokkaert (2011) "Equity in Health and Healthcare" – in Handbook og Health Economics, Vol.2
Lleres-Muney, A., "The Relationship Between Education and Adult Mortality in the U.S.," *Review of Economic Studies*, Vol.72(1), January 2005.
Lindahl, M., "Estimating the Effect of Income on Health and Mortality Using Lottery Prizes as an Exogenous Source of Variation in Income," *Journal of Human Resources,* XL(1), 2005, 144-168.

Deaton, A. "Health, Inequality and Economic Development," *Journal of Economic Literature,* 41(1), 2003, 113-158.
Eibner, C., and W.N. Evans, "Relative Deprivation, Poor Health Habits, and Mortality," *Journal of Human Resources,* XL(3), 2005, 591-620.
Brent Robert J. "Cost–Benefit Analysis and Health Care Evaluations", Edward Elgar Cheltenham, UK, Northampton, MA, USA, 2003

Description of course methodology

Problem sets and research projects will accompany lectures and will provide opportunities to master the estimation techniques introduced during lectures.

Sample tasks for course evaluation

1. Lleras-Muney, 2005 studies the effect of education on mortality rates (the paper is available at mynes).
(a) Suggest a mechanism (mechanisms) of the effect of education on mortality rates.
(b) Discuss the complications when trying to derive the causal effect of education on mortality. Briefly describe and justify the approach chosen in the paper.
(c) Consider Tables 3 and 4 of the paper. What is the estimated effect of education on mortality rates based on OLS and IV?
(d) Is the difference between the IV and OLS estimates in line of what you would expect? How is it justified in the paper?

2. The four main methods for making an economic evaluation in health care were discussed in the class. The problems that follow require the reader to select and assemble from a set of categories of costs and outcomes the necessary ingredients to conduct each of the four kinds of evaluation.

The evaluation being considered in Table 1.5 is Boyle et al.'s (1983) study of neo-natal intensive care in Canada. (All monetary figures cited are in Canadian dollars.) The provision of neo-natal intensive care involves increased current capital expenditures (to control the respiratory, nutritional and environmental circumstances of the baby) in order to increase a baby's future survival chances. The costs and consequences for babies with
birth weight 1000–1499 g are listed in Table 1.5 (all figures are undiscounted).

Table 1.5: Evaluation of neo-natal intensive care treatment

Cost or consequence	Before intensive care	With intensive care	Incremental effect
1. Cost per additional survivor (to hospital discharge)	$5400	$14 200	$8 800
2. Cost per additional survivor (to death)	$92 500	$100 100	$7 600
3. Survival rate (to hospital discharge)	62.4%	77.2%	14.8%
4. Survival time (per live birth):			
a. Life-years	38.8	47.7	8.9
b. QALYs	27.4	36.0	8.6
5. Earnings	$122 200	$154 000	$32 000

Source: Boyle et al. (1983)

1. Undertake a cost minimization comparison of neo-natal intensive care (before versus with intensive care) from: (a) the hospital's perspective and (b) society's perspective.

2. Undertake a CEA comparison of neo-natal intensive care from society's perspective. (Hint: more than one category of consequence could be used to form the CEA comparison.)

3. Undertake a CUA comparison of neo-natal intensive care from society's perspective. (Hint: only one category of consequence can be used to form the CUA comparison.)

4. Undertake a traditional CBA comparison (that is, use the human capital approach) to evaluate neo-natal intensive care from society's perspective. (Hint: only one category of consequence can be used to form the CBA comparison.)

Course materials

Required textbooks and materials

Books

1. *Handbook of Health Economics (2000)* Culyer A.J. and J.P Newhouse eds., Vol.1
2. *Handbook of Health Economics (2011)* Pauly, M.V., Thomas G.Mcguire and Pedro P. Barros eds., Vol.2
3. *International Handbook of Adult Mortality (2011)* Rogers R.G. and M.Crimmins eds.
4. Brent Robert J. (2003) "*Cost–Benefit Analysis and Health Care Evaluations*", Edward Elgar Cheltenham, UK, Northampton, MA, USA

Surveys and articles

1. Arrow, Kenneth J. "Uncertainty and the Welfare Economics of Medical Care", *American Economic Review*, Vol. 53, No. 5 (Dec., 1963), pp. 941-973
2. Becker, G., and Kevin Murphy (1988) "A Theory of Rational Addiction" *Journal of Political Economy*, Vol.96, 4, 675-700.
3. Becker, G., Michael Grossman and Kevin Murphy (1994) "An Empirical Analysis of Cigarette Addiction" *American Economic Review*, Vol.84, 3, 396-418.

4. Chernew, Michael E., and Joseph P. Newhouse (2011) "Health Care Spending Growth" – in Handbook of Health Economics, Vol.2
5. David Cutler and Elizabeth Brainerd (2005) "Autopsy on an Empire: Understanding Mortality in Russia and the Former Soviet Union," *Journal of Economic Perspectives,* Volume 19, Number 1, Winter, Pages 107-130
6. David Cutler, Angus Deaton, Adriana Lleras-Muney (2006), "The Determinants of Mortality", *Journal of Economic Perspectives,* Summer, pages 97-120.
7. Deaton, A. "Health, Inequality and Economic Development," *Journal of Economic Literature,* 41(1), 2003, 113-158.
8. Denisova, Irina (2010) "Adult Mortality in Russia: A Microanalysis" *Economics of Transition,* Volume 18(2) 2010, 333–363
9. Docteur, Elizabeth, and Howard Oxley "Health Care Systems: Lessons from the Reform Experience", OECD: DELSA/ELSA/WD/HEA, 2003
10. Dranove, David, and Paul Wehner "Physician-induced demand for childbirths", *Journal of Health Economics*, 13, 1994, 61-73
11. Eibner, C., and W.N. Evans, "Relative Deprivation, Poor Health Habits, and Mortality," *Journal of Human Resources,* XL(3), 2005, 591-620.
12. Escarce, José J. "Would Eliminating Differences in Physician Practice Style Reduce Geographic Variations in Cataract Surgery Rates?" *Medical Care*, Vol. 31, No. 12 (Dec., 1993), pp. 1106-1118
13. Fleurbaey, Marc and Erik Schokkaert (2011) "Equity in Health and Healthcare" – in Handbook og Health Economics, Vol.2
14. Foster, Martin, and Andrew Jones "The Role of Tobacco Taxes in Starting and Quitting Smoking: Duration Analysis of British Data", *Center for Health Economics Discussion Paper 176*, 2000
15. Fournier, Gary M., and Jean M. Mitchell "Hospital Costs and Competition for Services: A Multiproduct Analysis", *Review of Economics and Statistics*, Vol. 74, No. 4 (Nov., 1992), pp. 627-634
16. Grossman, M., "On the Concept of Health Capital and the Demand for Health," *Journal of Political Economy,*80(2), 1972, 223-255.
17. Grossman, Michael "The Human Capital Model" Ch. 7 in *Handbook of Health Economics, Volume 1, Edited by A.J. Culyer and J.P Newhouse*, 2000, pp.348-408
18. Gruber, J, "Tobacco at the Crossroads: The Past and Future of Smoking Regulation in the United States" *Journal* of *Economic Perspectives*, 15, 2001, 193-212
19. Gruber, Jonathan, and Maria Owings. "Physician Financial Incentives and Cesarean Section Delivery", *RAND Journal of Economics*, Vol. 27, No. 1 (Spring, 1996), pp. 99-123
20. Häkkinen, Unto, and Isabelle Joumard (2007) "Cross-country Analysis of Efficiency in OECD Health Care Sections: Options for Research", OECD Economic Department Working Papers No 554, OECD Publishing doi:10.1787/178861806081
21. Harris, Jeffrey E. "The Internal Organization of Hospitals: Some Economic Implications", *Bell Journal of Economics*, Vol. 8, No. 2 (Autumn, 1977), pp. 467-482
22. Lindahl, M., "Estimating the Effect of Income on Health and Mortality Using Lottery Prizes as an Exogenous Source of Variation in Income," *Journal of Human Resources,* XL(1), 2005, 144-168.
23. Linna, Miika "Measuring Hospital Cost Efficiency with Panel Data Models" , *Health Economics,* **7**: 415–427 (1998)
24. Lleres-Muney, A., "The Relationship Between Education and Adult Mortality in the U.S.,"*Review of Economic Studies*, Vol.72(1), January 2005.
25. Louis, Daniel Z., ElaineJ. Yuen, Mario Braga, Americo Cicchetti, Carol Rabinowitz, Christine Laine, and Joseph S. Gonnella "Impact of a DRG-based Hospital Financing

System on Quality and Outcomes of Care in Italy", *Health Services Research*, 34:1 (April 1999, Part II)
26. Luy, Marc, Christian Wegner, and Wolfgang Lutz (2011) "Adult Mortality in Europe" in *International Handbook of Adult Mortality (Rogers R.G. and M.Crimmins eds.)*
27. McGuire, Thomas G. "Physician Agency", Chapter 9 in *Handbook of Health Economics, Volume 1, Edited by A.J. Culyer and J.P Newhouse*, 2000, pp.462-536
28. McGuire, Thomas G., and Mark V.Pauly "Physician response to fee changes with multiple payers", *Journal of Health Economics*, 10, 1991, 385-410
29. Meslé, France and Jacques Vallin (2011) "Historical Trends in Mortality" in *International Handbook of Adult Mortality (Rogers R.G. and M.Crimmins eds.)*
30. Michael F. Drummond, Mark J. Sculpher, George W. Torrance, Bernie J. O'Brien and Greg L.
31. Murphy, Michael (2011) "Adult Mortality in the Former Soviet Union" in *International Handbook of Adult Mortality (Rogers R.G. and M.Crimmins eds.)*
32. Newhouse, Joseph P. "Toward a Theory of Nonprofit Institutions: An Economic Model of a Hospital", *American Economic Review*, Vol. 60, No. 1 (1970), pp. 64-74
33. Nyman, John A., and Dennis L. Bricker "Profit Incentives and Technical Efficiency in the Production of Nursing Home Care", *Review of Economics and Statistics*, Vol. 71, No. 4 (Nov., 1989), pp. 586-594
34. Poullier J-P, Hernandez P., Kawabata K. *National Health Accounts: Concepts, Data Sources, and Methodology* in: *Health systems performance assessment: debates, methods and empiricism* /edited by Christopher J.L. Murray, David B.Evans
35. Sloan, Frank A. "Not-for-profit Ownership and Hospital Behavior", Chapter 21 in *Handbook of Health Economics, Volume 1, Edited by A.J. Culyer and J.P Newhouse*, 2000, pp.1142-1174

Additional materials

European Health for All database (HFA-DB) (2008). Copenhagen, WHO Regional Office for

Europe (http://www.euro.who.int/hfadb).

Health in transition materials
http://www.euro.who.int/observatory/Hits/20020525_2?language=russian

http://www.euro.who.int/observatory/Hits/TopPage

http://www.euro.who.int/observatory/ctryinfo/ctryinfo

Academic integrity policy

Cheating, plagiarism, and any other violations of academic ethics at NES are not tolerated.