

MANAGEMENT IN HEALTH CARE PRACTICE A Handbook for Teachers, Researchers and Health Professionals	
Title	HEALTH AND DEVELOPMENT
Module: 1.1	ECTS (suggested): 0.2
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Keywords	Health and Development, Health Inequalities, Public Health, Health Care
Learning objectives	After completing this module students and public health professionals should: <ul style="list-style-type: none"> • be aware of importance of relation between development and health; • recognize needs for doing analysis of health inequalities in the country; • know the areas of health related to development; • improve the knowledge and understanding of the function of the health care system.
Abstract	Better health leads to faster economic growth which in turn, leads to healthier populations. Historical studies have shown that a substantial proportion of today's economic wealth can be attributed directly to past achievements in the health sphere. Health contributes to human capital through higher productivity, securing labour supply, through skills and the savings that become available for investment in physical and intellectual capital. Poor health negatively influences labour market productivity as measured by earnings and wages. At the same time, life expectancy increases with income across countries, but at a rate that becomes progressively lower as income increases due to diminishing health returns to income. However, the relationship between wealth and health is not as straightforward as was previously thought. Rather, it seems to be a more complex and multidimensional one and factors other than wealth exist that also influence the health of populations.
Teaching methods	Introductory lecture, small group, individual work and panel discussion.
Specific recommendations for teachers	<ul style="list-style-type: none"> • work under teacher supervision /individual students' work proportion: 50%/50%; • facilities: teaching room; • equipment: standard teaching equipment.
Assessment of students	The final mark should be derived from the quality of individual work and assessment of the contribution to the group discussions.

HEALTH AND DEVELOPMENT

Luka Vončina, Luka Kovačić

THEORETICAL BACKGROUND

Although health is primarily described as an intrinsic good, it also has qualities of an investment good. One could hardly disagree with the notion that better health leads to faster economic growth which in turn, catalyzed by the equitable distribution of wealth, leads to healthier populations. In other words, richer and more equitable countries will have healthier populations which will in turn nourish their development. A quote from the World Bank's 2004 World Development Report clearly summarizes the point: "broad improvements in human welfare will not occur unless poor people receive wider access to affordable, better quality services in health, education, water, sanitation, and electricity. Without such improvements in services, freedom from illness and freedom from illiteracy - two of the most important ways poor people can escape poverty - will remain elusive to many" (1).

Table 1. Monetary value of life expectancy gains in selected CCEE-CIS countries, 1990 - 2003

Country (1)	Life expectancy at birth (years)		Real GDP per capita (PPP\$)		Monetary value		
	1970 (2)	2003 (3)	1970 (4)	2003 (5)	Life expectancy gains (PPP\$) (6)	Gains per life year gained (PPP\$) (7)	(7) as % of 2003 GDP per capita (8)
Albania	72.61	75.77	3 000	4 584	3 157	999	22
Armenia	72.08	73.08	4 741	3 671	777	777	21
Azerbaijan	71.35	71.93	3 529	3 617	454	783	22
Belarus	71.25	68.53	5 727	6 052	-4 329	1 592 ^a	26 ^a
Bulgaria	71.48	72.39	4 700	7 731	1 873	2 059	27
Czech Republic	71.53	75.4	11 531	16 357	18 978	4 904	30
Estonia	69.94	71.78	6 438	13 539	7 741	4 207	31
Georgia	72.97	72.00	4 572	2 588	-466	480 ^a	19 ^a
Kazakhstan	68.81	65.89	4 716	6 671	-5 658	1 938 ^a	29 ^a
Kyrgyzstan	68.82	67.91	3 520	1 751	-279	306 ^a	17 ^a
Latvia	69.54	70.95	6 457	10 270	4 331	3 072	30
Lithuania	71.55	72.24	4 913	11 702	2 353	3 410	29
Moldova	68.64	68.07	3 896	1 510	-139	243 ^a	16 ^a
Poland	71.01	74.74	4 900	11 379	12 088	3 241	28
Romania	69.79	71.32	2 800	7 277	3 053	1 996	27
Russian Federation	69.28	64.94	7 968	9 230	-12 559	2 894 ^a	31 ^a
Tajikistan	70.03	72.78	2 558	1 106	363	132	12
Ukraine	70.54	67.83	5 433	5 491	-3 894	1 437 ^a	26 ^a
Uzbekistan	69.71	70.36	3 115	1 744	189	290	17

^a Indicates a loss of welfare.

Source: Marck Suhrcke, Regina Sauto Arce, Martin McKee and Lorenzo Rocco. The economic costs of ill health in the European Region. Background document for the WHO European Ministerial Conference on Health Systems "Health Systems, Health and Wealth". Tallin, Estonia, June 2008.

The evidence that human capital contributes to economic growth and development is abundant. Health contributes to human capital through higher productivity, securing labour supply, through skills and the savings that become available for investment in physical and intellectual capital (2). At the microeconomic level, poor health negatively

influences labour market productivity as measured by earnings and wages (3). Evidence from the EU suggests that people reporting “very good” or “good” health have earnings as much as four times higher than those with “poor” or “very poor” health (4). The evidence that ill health reduces labour supply is also ample (5). At the macroeconomic level, historical studies have shown that a substantial proportion of today’s economic wealth can be attributed directly to past achievements in the health sphere. It has been estimated, for example, that about 50% of the economic growth experienced by the United Kingdom between 1780 and 1980 can be attributed to improved health and nutrition (6). Many studies have shown that health helps to explain economic growth differences between poor and rich countries. These findings can be used to predict future trajectories of per capita income on the basis of a country’s reduction in mortality. The outcome of such an exercise in five low- and middle income countries in CEE and the CIS showed that even relatively modest scenarios bring substantial increases in GDP.

When compared with the base scenario of no change, an annual reduction in mortality of just 2% would increase GDP by 26% in Kazakhstan and the Russian Federation and by 40% in Georgia and Romania over 25 years (2).

The relationship between income inequality and mortality, as Backlund and al. stated in a study in the United States, is only robust to adjustment for compositional factors in men and women under 65. This explains why income inequality is not a major driver of mortality trends in the United States because most deaths occur at ages 65 and over. This analysis does suggest, however, the certain causes of death that occur primarily in the population under 65 may be associated with income inequality. Comparison of analytical techniques also suggests coefficients for income inequality in previous multilevel mortality studies may be biased (7).

CASE STUDY

While it is common knowledge that, within countries, rich people are more likely to be healthy than poor people; are people in rich countries necessarily healthier than the ones in poor countries?

The concept of health inequalities both within countries and among different countries is a particularly interesting one as it has the potential to provide insight into different factors that can influence health. As such, it has attracted a lot of attention. For example, it has been found that, within countries, levels of income individuals earn seem to play a significant role. According to Abel-Smith “the unskilled manual group in the United Kingdom has twice the rate of limiting long standing illness compared with the professional group” (8). Others, on the other hand, argue that factors such as social position, relative as opposed to absolute deprivation in wealth, control and social participation also seem to matter (9).

Before engaging into discussion about health and wealth, a few remarks should be made about the indicators used to describe both. WHO’s 1948 definition of health defines it as “A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. As Abel Smith lucidly points out the definition “expresses high rhetorical ideals but gives no indication of how health can be measured” (8). Furthermore, as the concept of health is a multidimensional one (Baxter lists five dimensions: disease, disability, frequency of illness, malaise and fitness (10)), it is hard to imagine a measure that would embrace them all and accurately measure health. In practice, statistics of morbidity and mortality are commonly used to measure ill health and give indications about health in general. Unfortunately, apart from methodological problems, the task of measuring health suffers also from practical ones. The quality of data

collected varies widely across countries and regions. In the WHO published edition “Measuring Socioeconomic Inequalities in Health” Kunst and Mackenbach conclude that “data problems are common and can easily lead to incorrect conclusion”. Therefore, data should be observed and countries should be compared with caution (11).

The link between levels of wealth and health of different countries is often regarded as a crucial one. In 1975 Preston showed that life expectancy increases with income across countries, but at a rate that becomes progressively lower as income increases due to diminishing health returns to income (12). Pritchett and Summers claim that country differences in income growth rates over the last three decades explain roughly 40 percent of the cross country differences in mortality improvements. They estimate that if income were one percent higher in the developing countries, as many as 33,000 infant and 53,000 child deaths would be averted annually (13). Samuel Preston’s millennium curve (12) seems to follow the same pattern of thought. The curve is a non-parametrically fitted regression function, weighted by population. The slope of life-expectancy with respect to income, described by Deaton, is steep in the group of poorest countries suggesting that at low incomes, income itself could be strongly related to health (14). However, in the same article, plotting changes in life expectancy from 1960 to 2000 against the corresponding average annual rate of growth of GDP in real PPP dollars, Deaton finds that “the connection between income and life-expectancy at low incomes may be plausible but, even among the initially poorest countries, differences in income growth explain less than a sixth of the variance in improvements in life expectancy, and even an increase in the 30-year growth rate by 2 percent a year would add only 1 year to life-expectancy”.

This finding clearly suggests that the relationship between wealth and health is not as straightforward as was previously thought. Rather, it seems to be a more complex and multidimensional one and factors other than wealth may exist that also influence health of populations.

The same conclusion could be drawn from the facts the health indicators of populations vary between countries that have similar GDPs and that some countries have similar health indicators at very different amounts of GDPs. Furthermore, some poorer countries seem to have healthier populations than some richer ones. For example, according to WHO data in 2000, Cuba had a life expectancy at birth of 76,8 years and a GDP per capita of USD 2723, while the United States of America with an almost thirteen times higher GDP per capita of USD 34602 had exactly the same life expectancy. China is another good example. Although in the year 2000 it had a GDP of only USD 3,760, it had a life expectancy at birth (total population) of 70.8 years (3).

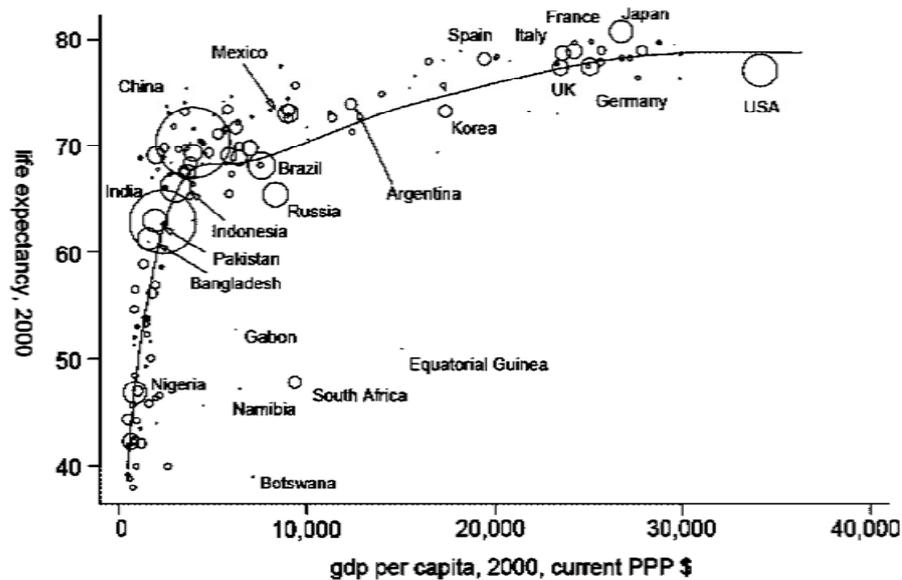


Figure 1. Millennium Preston Curve.

Note: Circles have diameter proportional to population size

Source: Angus Deaton. Health in an age of globalization. Research Program in Development Studies. Centre for Health and Wellbeing Princeton University. Prepared for the Brookings Trade Forum, Brookings Institution, Washington, DC. May 13th- 14th, 2004.

In the 1980s, the Rockefeller foundation selected five countries (China, Costa Rica, Cuba, Kerala and Sri Lanka) that appeared to have higher expectation of life than could have been expected from their level of wealth and commissioned studies of their health development to determine possible causes to these discrepancies. Common factors found in all of them were: above average equality of income, well developed primary education that covered females, a heavy emphasis on nutrition, land reforms, priority given to health and community participation and well developed rural health care (Halstead et al. 1987) (15). The importance of the findings the study discovered and their applicability to policymaking have since then attracted a lot of attention and stimulated a lot of research.

In the recent years, it has become widely acknowledged that inequalities in the distribution of income play a highly significant role in determining health of entire populations. Although some authors do not completely agree with this conclusion (see for example Mellor and Milyo, 2002) (16), most of the literature on the subject approves it. Le Grand argues that across countries, an association can be found between inequalities in health and inequalities in income (17). Wilkinson claims that the extent of income inequality in societies determines their average health status. He argues that as the gap between the incomes of the rich and poor increases, the health status of citizens becomes worse and worse and that it undermines social cohesion (18). According to Kennedy et al., inequalities in income at the state level exert an independent effect on an individual's risk of reporting fair or poor health (19). The relationship between economic growth, income inequalities and health status is an even more interesting one. According to Dreze and Sen, economic growth per se does not automatically improve health and social well being. They claim that unless it is effectively distributed, it merely increases socio-economic differences (20).

Generally, two major interpretations exist about the exact way in which income inequalities affect health. They do not necessarily negate each other, but rather observe the

problem from different angles. The first interpretation advocates the importance of psychosocial process based on perceptions of place in the social hierarchy (18). The advocates of this interpretation argue that such perceptions produce negative emotions like shame and distrust that affect health directly by psycho-neuro-endocrine mechanisms and indirectly through inducing behaviours like alcohol consumption and smoking. The second interpretation, known as the neo-material interpretation, sees income inequalities in a wider picture of historical, cultural, economic and political processes. It argues that these processes influence the general availability of food, education, health services, quality housing and other segments of infrastructure that influence health (21). Therefore, it sees income inequalities as a symptom of a wider array of social conditions and suggests that an unequal distribution of all of them influences health negatively on the deprived.

A closer look at the findings of the Rockefeller study also reveals that all of the “poor countries with good health” it examined gave high priority to education. Female education seems to be a particularly powerful tool for improving health. The World Bank’s World development report 1993: Issues in health reveals that studies from 25 developing countries showed that even as little as one to three years of female education seem to be able to reduce child mortality by about 15 percent. Similar levels of male schooling showed to have a more limited effect, reducing child mortality by 6 percent. The effects of female education on good health are heterogeneous. On the one hand it is known that female education reduces fertility and that reduced fertility has a positive effect on infant mortality. It seems plausible that educated women take better care of themselves during pregnancy, pay more attention to hygiene; appreciate maternal health services better than the uneducated and thus act more positive to health in general.

The impacts of malnutrition, sanitation and other hygienic measures on health are historically well known. In the reduction of deaths from infectious diseases in England before 1935, these factors played a much more important role than immunization and health services (22). The World Bank’s 1993 World Development Report claims that risks such as poor sanitation, insufficient and unsafe water supplies, poor personal and food hygiene, inadequate garbage disposal, indoor air pollution and crowded and inferior housing account for nearly 30 % of the global burden of disease (1). According to Halstead, most of the countries observed in the Rockefeller foundation funded studies developed programs that laid a heavy emphasis on food policies, water supplies and sanitation (15). The text has so far dealt with the health effects of wealth, wealth distribution, education, nutrition, sanitation etc. But, what is about healthcare? If all the above mentioned factors seem to play such important roles in determining health statuses of populations, how big of an effect can it have? According to the World Bank’s World Development Report 1993 (1), the developing countries as a group could reduce their burden of disease by 25% if they redirected a half of the funds they are currently spending on services of low cost effectiveness to public health programs. Primary healthcare delivered to the needy besides not being expensive seems to be especially important and effective. According to Gwatkin et al. a “well designed and carefully implanted interventions can reduce infant and child mortality by as much as one half, within five years, at a cost below two percent of per capita income” (23).

Arguments presented in this text strongly suggest policy guidelines primarily for developing, but also for developed countries. It could be argued that all of the above mentioned determinants of good health seem to be interdependent and that they seem to be a part of a bigger picture. It would appear that countries more orientated towards social justice, equity, equality and social welfare, rather than to the accumulation of power and capital in the hands of a minority, could expect their populations to be healthier. Social and political structures of societies could thus significantly influence health of populations.

Most important determinants of good health would be sustained firstly through political commitment to social justice, equity and equality which would then manifest themselves by social commitment to welfare, universal healthcare, a strong emphasis on education and the will to ensure everybody decent living conditions, or in other words in a commitment to wellbeing for the whole population,

EXERCISE

Task 1: Analysis of link between GDP and health in the region

Course participants should be divided into groups of 4-6. Group should first come to the decision which health indicators are related to the income, investment and wealth. Group has to select 5-7 indicators. Group has also proposed 5-7 countries which will be analyzed. Their decision group has to present to others in plenary. In the plenary session the participants should come to the agreement on:

- a) Indicators to be collected
- b) Countries to be analyzed

Task 2: Collection of data

Each participant has responsibility to collect GDP and health indicators from one country in the region. It is recommended to use WHO data base and HIT (Health in Transition) hard copy or electronic publication.

Task 3: Data analysis

After collection of data the small group should construct the tables, graphs and figures. After discussion group has to come to conclusion, which will be presented in a plenary. To organize work in the group small group should elect the group chairmen and reporter.

REFERENCES

1. World Bank's World Development Report 1993: Issues in Health
2. Suhrcke M et al. Economic costs of ill health. In: Figueras J, McKee M, Menabde N, eds. Health systems, health and wealth: Assessing the case for investing in health systems. WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies, Open University Press, in press.
3. WHO Statistical Information System; <http://www3.who.int/whosis/menu.cfm>
4. Mackenbach JP, Meerding WJ, Kunst AE. Economic implications of socioeconomic inequalities in health in the European Union. Luxembourg, European Commission, 2007.
5. Figueras J, McKee M, Lessof S, Duran A, Menabde N. Health systems, health and wealth: Assessing the case for investing in health systems. World Health Organization 2008 and World Health Organization, on behalf of the European Observatory on Health Systems and Policies 2008
6. Fogel RW. Economic growth, population theory and physiology: the bearing of long-term process on the making of economic policy. The American Economic Review, 1994; 84(3): 369-95.
7. Backlund E, Rowe G, Lynch J, Wolfson MC, Kaplan GA, Sorlie PD. Int J Epidemiol. 2007; 36(3): 590-6.

8. Abel-Smith, B. *An Introduction to Health: Policy, Planning and Financing*. Longman, London, 1994.
9. Marmot M, Wilkinson RG, eds. *Social determinants of health*. Oxford, Oxford University Press, 1999.
10. Blaxter, M. Self-definition of health status and consulting rates in primary care. *Quarterly Journal for Social Affairs* 1995; 1: 131-71
11. Kunst E and Mackenbach J P, *Measuring Socioeconomic Inequalities In Health*, WHO – Regional Office for Europe. (<http://www.euro.who.int/Document/PAE/Measrpd416.pdf>)
12. Preston, SH. The changing relation between mortality and level of economic development. *Population Studies* 1975; 29: 231–48.
13. Pritchett L, Summers LH. Wealthier is healthier. *Journal of Human Resources* 1996; 31(4): 841–68.
14. Deaton A. *Health in an age of globalization 2004*, Prepared for the Brookings Trade Forum, Brookings Institution, Washington, DC. (http://www.wws.princeton.edu/~rpds/downloads/deaton_healthglobalage.pdf)
15. Halstead SB et al. *Good Health at Low Cost*. Rockefeller Foundation, New York, 1987.
16. Mellor J, Milyo J. Is Exposure to Income Inequality a Public Health Concern? Lagged Effects of Income Inequality on Individual and Population Health. *Health Services Research* 2002; 38 (1).
17. Le Grand, J. Inequalities in health: Some international comparison. *European Economic Review* 1987; 31: 182–91.
18. Wilkinson RG. *Unhealthy Societies. The Afflictions of Inequality*. London: Routledge, 1996.
19. Kennedy BP, Kawachi I, Glass R, Prothrow-Stith. Income distribution, socioeconomic status, and self-rated health: A US multi-level analysis. *Br Med J* 1996; 317: 917-21.
20. Dreze JP, Sen, AK. *The Political Economy of Hunger*. Clarendon, Oxford, 1990.
21. Lynch JW, Kaplan GA. Understanding how inequality in the distribution of income affects health. *J Health Psychol* 1997; 2: 297-314
22. Mckeown T, in: Bavey B et al. *Health and Disease: A reader*. Open University Press, Buckingham, 2nd edition, 1995.
23. Gwatkin, DR, Wilcox JR, Wray JD. *Can Health and Nutrition Interventions Make a Difference?* Monograph 13, Overseas Development Council: Washington D.C. 1980.

RECOMMENDED READINGS

1. Commission on Macroeconomics and Health (CMH) [web site]. Geneva, World Health Organization, 2008 (www.who.int/macrohealth/en/, accessed April 2008).
2. Wilkinson, R.G. 1997. Socioeconomic Determinants of Health. *Health Inequalities: Relative or Absolute Material Standards?* *BMJ* 314(7080):591–5.
3. Suhrcke M et al. *The contribution of health to the economy in the European Union*. Brussels, European Commission, 2005.
4. World Bank 2004 World Development Report
5. European Observatory on Health Systems and Policies. *Health Systems in Transition (HiT) profiles*. (http://www.euro.who.int/observatory/hits/20020525_1, accessed July 16, 2008)
6. WHO Data Base (<http://www.who.int/research/en/>, accessed July 16, 2008)