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Measuring human capital**Health expenditure: investment in human capital
and measuring human capital from health status perspective****Note by the National Statistical Committee of the Republic of Belarus***Summary*

The note provides an overview of how the health aspect of human capital is considered in the official statistics in the Republic of Belarus.

In today's circumstances human capital, as compared with other economic resources, is becoming the dominant factor of innovative development of the economy. With the changing role of labour force in the creation of value added, the importance of investment in developing labour resources is reconsidered. Human capital is formed, first of all, by investment in improving living standards and quality of life, including health. Population health determines in many respects the ability to form, develop and use human capital.

The Republic of Belarus plans to implement National Health Accounts in 2011-2013 as a mechanism to achieve the goal of improving population health. The Health Accounts will help to develop national policies for the effective public health financing and attracting additional funds for public health. The information can be used for the financial forecasting of public health needs and for the comparisons with previous experiences or other country practices.

1. In today's circumstances human capital, as compared with other economic resources, is becoming the dominant factor of innovative development of the economy. In essence, *the accumulated human capital* is an investment and return on the investments in persons, in their quality of life, individual working conditions and tools, living environment and activities.

2. For many years the person's productive capacities were considered and assessed as one of the quantitative factors of production. The task was only to successfully combine labour and fixed and circulating capital.

3. However, the evolution of the society entails the improvement of status of people in the economic system of the society. Labour, which is a conscious, purposeful and productive activity, is the most essential part of the human vital activity, and the notions in this sphere are transforming most dynamically.

4. With the changing role of labour force in the process of creation of value added, the importance of investment in developing labour resources in the economy is reconsidered. From the economic point of view, *investment in human capital* refers to the social expenditures for increasing labour productivity and future incomes of both individual capital bearers and the society as a whole. Therefore, indicators of the socio-economic development of a country or a region are generally used to analyze the effectiveness of such investments. The investment in a person becomes an indispensable condition to ensure socio-economic progress of a country.

5. Human capital is formed, first of all, by investment in improving living standards and quality of life, including health. Investment in health capital is a basis for human capital as a whole as it prolongs the work-capable period of human life and thus slows down physical depreciation of human capital.

6. Population health determines in many respects the ability of formation, development and use of human capital. Serving as the foundation and the basic condition of functioning human capital, health is the most important asset of a person comprising hereditary and acquired (as a result of investment) components.

7. Investment in health in any period increases health stocks for all future periods and, consequently, extends the life span; this may also relate to the employment longevity. The particular feature of health capital is that it influences the productivity not directly, but indirectly, reducing the period of disability and extending the productive phase of human capital. Moreover, the distinguishing feature of health capital is its accelerating depreciation at a certain age. Taking into account that the costs of protecting and improving health are not accumulated, i.e. they are part of current and not capital expenditure, they are intended for the current reproduction of human capital of a certain quality and contribute to maintaining normal life activity of its bearer, a person. Therefore, health investment:

(a) First, determines the capabilities of existence and functioning of human capital;

(b) Second, by reducing morbidity and mortality, prevents its physical depreciation and contributes to more intensive and continued labour, i.e. increases the volume of human capital and the period of its productive use.

8. Depending on the degree of generalization of human capital, the following components can be identified: individual, collective, and social. The first two components are viewed at *micro level* as the human capital of an individual person or a group of persons united by a specific attribute: company staff, membership of a socio-cultural group, etc. Social component is human capital at the *macro level*. It represents the total human capital accumulated by the society which, in its turn, is a part of national wealth, a strategic resource and a factor of economic growth.

9. Significant costs and different types of resources are required for the reproduction of human capital both from an individual person and from the society (public institutions, private companies, etc.). Sources of such investments are employer's expenditure, state budget and individual person's expenditure.

10. Individual health investment can be divided into direct investment, including individual spending on preventive and therapeutic measures, and indirect investment, related to healthy life style. Preventive medical measures prevail at the beginning of the life cycle of an individual and decrease with ageing, while therapeutic measures increase. An important point in modeling health investment is that it influences health with a time-lag. A person makes health investment based on health status at present and in predictable future, at the same time practically all health investment has effect only after a certain time. Therefore, an adequate model of returns on human capital investment should include health investment made in past period.

11. Researchers define the return on health investment as the difference between amounts that could have been lost due to illness (missed income, costs of medical treatment) and investment to preserve health (time and resources spent on preventive medical services, diet, rest, etc.). Individual health investment has indirect effect on the possibility to apply new technologies in branches of industry and in national economy. Related to the accumulation of health capital, prolongation of life also stimulates investment in education and increases savings rates. In its turn, this leads to the increase in physical capital stock per worker.

12. It is known that any significant changes in labour resources and in opening up new possibilities also include potential threats. In the next decade we cannot exclude a number of negative trends. The major problem is the reduction of human capital. This is a multifaceted social phenomenon comprised of a number of interrelated processes. The most significant of these are population decline and population ageing and, first of all, reduction of the number of children. In 2010 life expectancy at birth in the Republic of Belarus was 70.4 years (64.6 years for men and 76.5 years for women), while in 1964-1969 it was 72.9 years (almost 69 years for men and 76 years for women). In economically developed countries this value is higher by 8-13 years for men and by 5-8 years for women.

13. Population decline has been observed in the country since 1994. In 2001 the number of population dropped below 10 million. The main cause of the population decline is the excess of the number of deaths over births. Natural population decrease has become typical for the country starting from 1993. In 2002 it reached its maximum value of 5.9 per 1000 persons. This resulted in the reduction of the number of children less than 16 years old by 620 thousand (by almost 30%) at the country level, of which by 234 thousand (by 38%) in rural areas during the decade after the 1999 population census. Such noticeable reduction in the number of children is connected with the falling birth-rate in the 1990s, which has particularly affected the 10-14 years age group dynamics. In the intercensal period the number of children aged 10-14 has reduced 1.7 times, or by 363 thousand.

14. The proportion of children 16 years old at the country level dropped from 21% in 1999 to 16% in 2009.

15. Although in Belarus both the proportion and the number of working age population (men aged 16-59 years, women aged 16-54 years) are growing, the increase is mainly due to increase in the 50-54 years age group. The number of this group grew more than 1.5 times, or by 264 thousand. *This is the evidence of the fact that with the decreasing birth-rates the share of youth is dropping, and the percentage share of pensioners is growing. In general, the demographic situation in the country can be currently assessed as a crisis.*

16. Preservation or restoration of health depends to a considerable extent on the self-preserving behavior of a person which is determined by the subjective self-assessment of the individual's physical condition and the importance of health in their value system.

17. Based on the results of the household sample survey, as of 1st January 2011, 32.5% of the population 16 years old and over considered their health to be good and 6.1% to be poor. The most common assessment of health status, i.e. "satisfactory", was reported by 61.4% of the country's population. At the same time, as compared with 2000, the subjective assessment of health status has significantly improved.

18. An important constituent of the self-preserving behavior are active measures taken by a person to maintain health and lead a healthy lifestyle. As becomes evident from the research results, a unit of resources invested in developing mass sports provides a tenfold saving in medical expenditure. Today, significant resources are being invested in the development of sport infrastructure in Belarus. Although physical exercise and sport activities are not widespread enough in the country, based on the results of a household sample survey, the share of population 16 years old and over practicing physical exercise and sports has grown from 16.3% as of the beginning of 2000 to 23.7% as of the beginning of 2011.

19. At the same time, the main factors of reduction of human capital that directly affect population health refer to self-destructive behavior (alcoholism, smoking, drug abuse).

20. As of the beginning of 2011, there were 2.1 thousand patients with alcoholism and alcoholic psychoses per 100 000 population.

21. The share of smokers was 27%, with 51% among men and about 10% among women. However, from 2001 through 2011 the share of smoking women grew almost 1.5 times, and the share of smoking men dropped by 3.5 percentage points.

22. Health status is greatly affected by the aftereffects of the Chernobyl Nuclear Power Plant disaster.

23. The most important monetary indicator of human capital in the sphere under review is a share of public health expenditure in GDP. The share of health expenditure in GDP in the Republic of Belarus was 8% in 2010. According to the WHO, the required resources should be not less than 6-6.5% of GDP to meet the demand of the society for modern medical service and restoration of labour resources.

24. The WHO strategy to strengthen health service systems is aimed at the improvement of key health indicators by strengthening the effectiveness of health service systems. Policy makers need reliable information on the amount of financial resources spent on public health, their sources and uses in order to formulate policy and increase the effectiveness of public health systems.

25. National Health Accounts (NHA) provide data to monitor health spending patterns for all sectors: public and private, for various activities in the field of health protection, providers, diseases, population groups and regions of a country. This helps to develop national policies for the effective public health financing and to attract additional funds for public health. The information can be used for the financial forecasting of public health needs and for the comparisons with previous experiences or other country practices.

26. The National Health Accounts are planned to be implemented in 2011-2013 as a mechanism for carrying out the tasks set to achieve the goal of the improvement of population health.

27. The NHA implementation would allow to obtain the comprehensive information on the financing of specific directions and activities within the national public health system. By using NHA, it would be possible to tell exactly how much funds (public, donor or from

other sources) are spent on such socially significant diseases as tuberculosis, cardiological and oncological diseases, on maternity and childhood protection, etc. Comparing the data from main NHA tables with the demographic data (morbidity, mortality, birth rate, etc.) the Ministry of Health, as the public health authority, will be able to derive the qualitative and quantitative assessment of the distribution and use of financial flows.

28. Recently the term “human capital” is frequently used by policy makers and economists in the Republic of Belarus. A system of statistical indicators measuring individual components of this complex phenomenon is used to characterize it. Based on the structural components of human capital, it is possible to characterize both an individual and a social group or a country as a whole.

29. At the same time, the assessment of human capital is difficult because it has a holistic, integral nature. Experience shows that it would be incorrect to underestimate or overestimate the significance of one part of it at the expense of another part.
