



The Social and Economic Consequences of the Dissemination of HIV Infection

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ABSTRACT

The issue of combating HIV/AIDS is one of the priority directions of the state policy of Russia. The AIDS epidemic continues to be devastating to human life, as evidenced by the demographic indicators. The HIV/AIDS epidemic is causing a slowdown in growth or a decrease in the gross domestic product in many countries. Researchers demonstrate a correlation between rising levels of HIV-infection and worsening economic performance. However, the incidence of HIV-infection remains exceptionally high in specific segments of the population and countries, making the disease prevention a key to controlling the spread of HIV.

Key Words: HIV; AIDS treatment; social and economic consequences.

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INTRODUCTION

Sexually transmitted diseases are current public health concerns [1-3]. By the end of 2013, the number of people living with HIV (PLHIV) worldwide was estimated at around 35 million people [4-7]. Out of the total number of PLHIV, approximately 3,600,000 are aged 50 years and older. Most of them (2,900,000) live in low- and middle-income countries. While currently, the proportion of adults living with HIV aged 50 and over exceeds 10%. In high-income countries, about one-third of the adults living with HIV are 50 or older. During the period of epidemiological surveillance, more than 78 million people became infected with HIV.

The number of new cases of HIV infection in 2013 was 2.1 million people, including 240,000 new cases among children. This was the lowest number of new infections per year since the mid-to-late 1990s when about 3.5 million individuals were infected with HIV each year.

The number of people infected with HIV continues to decline. However, in some countries, the rate of cases drop is relatively faster than others [6-8]

Currently, in addition to improving the life-quality and reducing deaths due to AIDS, antiretroviral therapy (ART) prevents HIV transmission by reducing the viral load, thereby reducing the likelihood of transmission of the virus. Hence, making it possible to prevent new cases of HIV infection.

Expanding ART coverage allows public access to treatment, care, and support, which has an impact on an increasing number of PLHIV worldwide. Consequently, HIV infection has been converted from a fatal to a manageable chronic ailment. In 2012, compared to 2003, there was a twenty-fold rise in the level of ART coverage. Based on the Joint, United Nations Programme on HIV/AIDS (UNAIDS) estimates, since 1995, the total number of deaths prevented in low- and middle-income countries due to the introduction of ART has been

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estimated 2,500,000. These successes were mainly achieved in the last few years when there was a rapid expansion of access to treatment, and only in 2010, 700,000 such deaths were prevented [6, 7, 9, 10].

Since the start of the outbreak, the disease has claimed more than 39 million lives. No country has escaped the terrible consequences of this global epidemic. In 2013, the number of people who died as due to AIDS-related diseases reduced to 1.5 million, while in the mid-1990s - at the peak of the epidemic - the number was 2,200,000, while in 2005 the estimate was 2,300,000. In other words, compared to the peak value of the AIDS death rate in 2005, the number of deaths decreased by 35% in 2013 [4, 11, 12].

In 2018, based on UNAIDS statistics, the world number of people living with HIV infection was 37.9 million: 36.2 million adults and 1.7 million children (under the age of 15). Since the start of the HIV epidemic, 74.9 million people have been infected, and 32 million people have died from AIDS-related illnesses. In 2018, 79% of individuals living with HIV knew their status, and about 8.1 million did not know that they were living with HIV. During the same period, 23.3 million people living with HIV had access to antiretroviral therapy, contrasted with 7.7 million in 2010 [13].

People living with HIV require preventive treatment for tuberculosis, which decreases the risk of developing the disease and reduces the mortality from tuberculosis/HIV by about 40%. According to estimates, 49% of people living with HIV and tuberculosis do not know about co-infection and therefore, do not receive treatment [4].

Currently, the epidemic situation is characterized by a high level of HIV infection among various groups of the population, mainly people of working age. Besides, uneven distribution and modifications in the main route of HIV transmission from parenteral to sexual are also crucial characteristics. On the other hand, the HIV epidemic hurts the working-age population of Russia, leading to negative social and economic consequences.

The demographic impact of AIDS

AIDS epidemic continues to be devastating to human life. Life expectancy at birth (an indicator of the average number of years a newborn child would have lived if mortality remained unchanged throughout life) has decreased by more than ten years as a result of HIV-infection. Countries that have been affected by HIV-infection in the adult population account for 20% or more. The impact on the population is most noticeable in Africa. In the period between 1995-2000, in 38 African countries, the life expectancy was estimated at 47 years old, which constitutes six years less than it would be if there were no AIDS. According to forecasts, it will only reach 52 years in 2025 10 years less than it would be in the absence of

AIDS. In seven countries with an adult HIV prevalence of 20% or more, life expectancy at birth was estimated at 49 years in the period between 1995-2000, which is 13 years lower than in the absence of AIDS. By 2025, the difference between life expectancy in AIDS and life expectancy without AIDS might reach 29 years [6, 7, 10]. The UN population Fund also confirms the previously mentioned statistics by 2025, the population of 38 African countries will reach 983 million, which is 14% less than in the absence of AIDS.

In seven countries that are located in Africa, the incidence of HIV infection among adults is 20% or more. Moreover, by 2025 it is predicted that the population of these countries will be 35% lower than it would be if there were no AIDS [14].

About half of the HIV-infected people currently living do not know about their diagnosis, this is the main reason for maintaining the HIV epidemic process at a fairly intensive level. Late diagnosis of HIV infection at the stage of manifestation of severe opportunistic infections is a problem in both developed and developing countries. The lack of timely HIV diagnosis and ignorance of diagnosis may lead to a cascade of problems at the level of a single HIV-infected individual and at the level of society. At the individual level, it is manifested by the diagnosis of HIV infection at the stage of the severe AIDS-associated diseases, which are difficult to verify, and the patient does not respond well to therapy. Consequently leading to disability and death. While at the society level, the lack of a timely diagnosis may contribute to further spreading of HIV infection and a significant economic burden for the treatment, particularly at the late stages of the disease [9, 11, 15, 16].

The impact of the HIV/AIDS epidemic on the economy

The economic impact has shown troubles since the start of the pandemic. However, we believe that HIV/AIDS epidemic is causing a slowdown in the growth of the gross domestic product (GDP) in many affected countries, while others believe that HIV/AIDS has little effect on macroeconomics. It is indeed difficult to empirically evaluate the impact of HIV/AIDS on economic efficiency since many factors, together with HIV/AIDS, influence economic growth. The most affected countries by the epidemic also face drought, war, and other problems.

In the mid-1960s, the number of studies on the economic effects on health increased exponentially after the codification of the "cost of illness" system. However, many studies continue to use a version of this methodology (combining "direct" medical costs, travel expenses. with "indirect" secondary production costs due to reduced working hours). Macroeconomic growth models have increasingly used for better understanding the dynamic and multifaceted nature of loss at the public

level. There is also a growing interest in the policies and research to understand the microeconomic consequences of ill health, especially at the household level in low-income countries [9].

Domestic researchers also found that there is a relationship between the growth of the level of HIV-infected people and the deterioration of economic indicators. It is shown that insufficient funding, lack of access to medical care, and stigmatization of society are essential factors in the growth of the number of HIV-infected people [17-21].

The HIV/AIDS epidemic can affect the economy in various ways:

1. Supply growth will slow down in the AIDS epidemic. The economic impact may vary depending on the sector of the economy and the extent to which HIV/AIDS affects the skilled workforce.
2. Saving and investment of families will be reduced by increasing spending on health care and preventing/reducing the impact of HIV/AIDS. If children's health, education, and nutrition suffer, as a result, the prospects for long-term economic growth and development will be reduced.
3. The AIDS epidemic can also redirect public spending from investment in physical and human capital to spending on health, which leads to a slowdown in GDP growth over time. Foreign and domestic private investment may also decrease if investors are convinced that the epidemic is seriously undermining the rate of return on investment.
4. In the affected countries, poverty will increase in the context of the HIV/AIDS epidemic as the rate of growth in per capita income decreases [9, 11, 22]. Cohen (1997), among others, noted the impact of HIV on the working-age population, which tends to reduce overall output and worsen the dependency ratio.

The impact of HIV/AIDS on the health sector

In many countries severely affected by HIV/AIDS, there is a lag in the development of the health sector even before the outbreak of the epidemic. The HIV/AIDS epidemic has created many additional problems in this area, as it has resulted in a sharp increase in health care costs and the exhaustion of health insurance systems. Also, medical workers themselves get sick and die. As a result, the supply of affordable health services is shrinking, and the demand is growing. The costs of treating both AIDS itself and opportunistic diseases that are characteristics of people whose immune systems are weakened by HIV/AIDS are increasing. The allocation of resources to HIV/AIDS treatment has meant a reduction in funding for other health-related tasks. Since the AIDS epidemic has made it increasingly difficult for

governments to provide health services within the public sector, the private sector, households, and every individual have to bear an increasing share of the costs in this area [16, 23].

The volume of funding for AIDS programs in 2018 decreased in all segments: domestic resources showed a decrease of 2%, the global fund to fight AIDS, tuberculosis, and malaria as a global fund also showed a decrease by 20%, due to deviations in the three-year grant cycle. Furthermore, other multilateral channels showed a reduction of 2%, bilateral programs of the US government reduced by 3%, bilateral programs of other sponsor countries was also reduced by 17%; charitable organizations decreased by 18% and other international sources reduced by 4%.

Low- and middle-income countries are increasingly self-financing the fight against AIDS. Between 2010 and 2018, low and middle-income countries' investment in HIV from their resources increased by 50%, while foreign investment increased by only 4%. Domestic financing in low- and middle-income countries accounted for 56% of total financial resources in 2018, although this figure might differ significantly by region. In eastern and southern Africa, regions with a high prevalence of HIV, 59% of resources to fight the epidemic in 2018 came from sponsors; if we exclude South Africa, this figure rises to 80%. Whereas, between 2010 to 2018, all major sponsors, except the United States, have reduced their contribution to the fight against AIDS through direct bilateral agreements with other countries [22, 24].

Based on some assumptions, it was found that compared to the current level of assistance, the expansion of HIV self-testing will result in savings of 75 million dollars. Since self-testing saves money and improves results; therefore, it represents the dominant strategy and should be adopted regardless of the availability of resources for HIV testing [25, 26].

Theodore Cohn, in a model applied in several countries of the Caribbean, identified four channels through which HIV/AIDS can affect the economy:

- Production channel;
- Resource allocation channel;
- Income distribution channel;
- Regeneration channel.

The mechanism refers to the channel of production through which HIV/AIDS affects the main factors of production labor and capital because the production process will be less fruitful than in the absence of HIV/AIDS.

Through the second channel, HIV/AIDS can affect the economy is the channel of resource allocation. They are considering this channel as one of the most essential functions of the economic system. HIV/AIDS redirects

some of these resources to health care costs from other production goals.

The third accepted channel through which HIV/AIDS influences the economy is the distribution channel, namely income distribution. In an epidemic situation that raises health care costs and weakens the income, HIV/AIDS can not only influence all groups of the population but also expand the gap between diverse social strata.

The fourth regeneration channel deal with the investments in human capital, physical capital, and new technologies necessary for the economy to grow. As the HIV/AIDS epidemic decays the economic potential and human capital of the economy, it will undermine the process of economic development [27-29].

With increased funding for HIV treatment and an increasing number of people living with HIV, we can only acknowledge the impact of antiretroviral therapy, despite the challenges facing the policymakers to tight the treatment-budget to manage the current HIV epidemic. Cost-effectiveness analyses of simulations can help to determine which HIV interventions might be the best. The incidence remains extremely high in certain countries making prevention a key to controlling the spread of HIV. Extended HIV testing can be more cost-effective as a result of reduced time and offering a higher level of patient acceptance, lower costs for diagnostic tests. Since the cost of a new HIV diagnosis decreases with increasing HIV positivity, HIV testing should be expanded in areas with high HIV prevalence [30, 31].

CONCLUSION

The world number of people living with HIV is increasing. Russia remains among the countries where the rate of HIV infection is high. Tuberculosis is among the leading causes of death in HIV-infected individuals, accounting for about one-third of AIDS-related deaths. The AIDS epidemic continues to cause devastating consequences for human lives. Life expectancy is decreasing, and the population is decreasing.

On the other hand, the HIV/AIDS epidemic is causing a slowdown in gross national product growth, primarily in developing countries. At the same time, many factors might also affect economic growth. The countries most severely affected by the epidemic are also facing drought, war, and other serious challenges. The involvement of primary health care facilities is desirable in terms of effectiveness, but the availability of intervention needs to be evaluated since expansion will require additional investment. Collectively, it will be very useful to introduce models of prevention and treatment for patients with HIV/AIDS, especially creating centers, where patients can receive integrated health-care services of doctors of different specialties and sub-specialties.

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