

DEVELOPMENT OF PUBLIC HEALTH IN GEORGIA: CHALLENGES AND POLICY ISSUES

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Received 23 April 2022, Accepted 17 May 2022

<https://doi.org/10.31688/ABMU.2022.57.2.07>

ABSTRACT

Introduction. The reorganisation of healthcare system in Georgia was based on the development of public health, aiming at activating the preventive medicine and operating efficient tools of epidemiological surveillance.

The objective of the study was to evaluate the attitudes and values of public health reform in Georgia.

Materials and methods. We performed a documentary analysis, which included official documents and journal publications.

Results. Georgia was the only country (except the Baltic states) to abandon the Soviet system of Sanitary-Epidemiological Service, completely reorganize it and establish a new public health infrastructure. The reorganization of the Sanitary-Epidemiological Service implied the separation of supervisory (sanitary control) and executive functions, typical of the Soviet system. As a result, the Public Health Department and the Department for Sanitary Supervision and Hygienic Regulation were established. In terms of decentralization, the funds out of four elements of the healthcare system (financing, Policy Development, Standard Definition, Management, and Administration) were distributed at central, regional, and municipal levels.

Conclusions. In a globalized world, the public health challenges go beyond national borders and interests,

RÉSUMÉ

Développement de la santé publique en Géorgie : défis et enjeux politiques

Introduction. La réorganisation du système de santé en Géorgie s'est appuyée sur le développement de la santé publique, visant à activer la médecine préventive et à faire fonctionner des outils efficaces de surveillance épidémiologique.

L'objectif de l'étude était d'évaluer les attitudes et les valeurs de la réforme de la santé publique en Géorgie.

Matériaux et méthodes. L'article est basé sur une analyse documentaire, qui comprenait des documents officiels et des publications de journaux non officiels.

Résultats. La Géorgie a été le seul pays (à l'exception des États baltes) à abandonner le système soviétique de service sanitaire et épidémiologique, à le réorganiser complètement et à établir une nouvelle infrastructure de santé publique. La réorganisation du Service sanitaire et épidémiologique impliquait la séparation des fonctions de surveillance (contrôle sanitaire) et d'exécution, typique du système soviétique. En conséquence, le Département de la santé publique et le Département de la surveillance sanitaire et de la réglementation hygiénique ont été créés. En termes de décentralisation, les fonds des quatre éléments du système de santé (financement, élaboration des politiques, définition

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having huge global political and economic consequences. Therefore, modern public healthcare is reviewed in a global context and requires international regulations, transnational actions, and solutions based on coordinated cooperation among different countries of the world.

Keywords: public health, healthcare reforms, sanitary-epidemiological service, preventive medicine.

INTRODUCTION

Public health is the key function of the state, ensuring disease prevention and health promotion, achieved through organized public efforts, environmental enhancement, fight against infections, raise of public awareness on hygienic issues, early identification of diseases. Furthermore, the study of diseases' epidemiology allows rational and efficient use of resources to address priority issues, that are of primary importance for a low-income country, like Georgia.

In the early years of its existence, the Soviet Union paid great attention to disease prevention. A broad network of sanitary-epidemiological stations was set up for fighting the epidemics of infectious diseases such as typhoid, cholera, chickenpox, dysentery, and malaria. Mass vaccination, epidemiological surveillance of malaria, water supply sanitary control, hygienic waste disposal, wastewater improvement, and milk pasteurization was included on the list of main activities. In the 1950s and 1960s, the scope of the Sanitary-Epidemiological Service was expanded to include occupational hygiene and environmental protection.

Initially, the Sanitary Epidemiological Service played a major role in fighting against infectious diseases. There have been developed comprehensive vaccination programs for children, helping to reduce many communicable diseases¹. However, it was much less effective in combatting non-communicable diseases, and health promotion and inter-sectoral actions were completely neglected. Later, in the Soviet Union, the focus was directed to medical-diagnostic measures, which were less concerned with disease prevention. Such a model was expensive, as resources were mainly spent on the elimination of outcomes, the reason of which could have been prevented.

The situation worsened especially after the collapse of the Soviet Union in the first years of

standard, gestion et administration) ont été répartis aux niveaux central, régional et municipal.

Conclusions. Dans un monde globalisé, les défis de santé publique dépassent les frontières et les intérêts nationaux, ayant d'énormes conséquences politiques et économiques mondiales. Par conséquent, la santé publique moderne est examinée dans un contexte mondial et nécessite des réglementations internationales, des actions transnationales et des solutions basées sur une coopération coordonnée entre différents pays du monde.

Mots-clés: santé publique, réformes sanitaires, service sanitaire-épidémiologique, médecine préventive.

independence^{2,3}. The tough political situation deteriorated the social-economic condition of the country, increased the number of refugees, disrupted the healthcare system, aggravation of sanitary-epidemiological conditions and lack of preventive measures contributed to a significant increase of socially dangerous infectious diseases^{4,5}.

The situation was further complicated by violation of the vaccination deadlines and nearly terminating the vaccination for children and adolescents in the early 1990s. Between 1990 and 1995, the level of immunization dropped sharply from 95% to 30-50% with vaccinations for major preventable diseases (tuberculosis, diphtheria, pertussis, tetanus, polio, measles), leading to an outbreak of socially dangerous infections⁶.

The failure of the planned vaccination due to the lack of vaccine material led to an epidemic of diphtheria in 1991-1992. There were 23 cases of diphtheria in 1993, 312 cases in 1994, and 425 cases in 1995. Out of those cases, 42 turned out to be fatal. Cases of measles, rubella, botulism, rabies, tetanus, diphtheria, malaria, visceral leishmaniasis, hepatitis B, and tuberculosis were increased. The incidence of sexually transmitted diseases, human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) grew. Acute respiratory infections accounted for 43% of mortality in children under 1 year of age.

The number of patients with ischemic heart disease and hypertension increased significantly from 1990 to 1995. In the given period, the growth of mortality due to cardiovascular diseases was correlated with the emergence of relatively new risk factors (socio-economic crisis, unemployment, poverty, and constant stress), added by deteriorating quality of medical care, less affordability of medicines and unregulated death registration practices. Moreover, high rates of tobacco and alcohol consumption, unhealthy diet, and reduced physical activity became significant contributing factors to illness and mortality^{7,8}.

THE OBJECTIVE OF THE STUDY was to assess the attitudes and values of public health reform in Georgia.

MATERIAL AND METHODS

The article is based on a documentary analysis, which included both official and non-official documents. The official papers included legislative and other governmental documents. All health policy documents that could be obtained from World Health Organization (WHO)/EURO, the Georgian Ministry of Health, and regional health departments were included in the study. In total, 14 official papers were analysed.

Non-official documents were journal publications from major health databases (SCOPUS, MEDLINE, PubMed). The following search terms were used: Georgia plus „public health reform“, „public health system“, „sanitary-epidemiological system“, and „san-epid“. Articles published from 1990 to 2021 were included. Articles were included if they contained descriptions of one or more of the following aspects: (1) the public health system or public health reforms in Georgia; (2) organizational structure and reforms of the public health system. Articles were restricted if (1) they were published in Georgian; (2) they merely focused on reforms of the health care system. When the articles were analysed, the English translation of the title was compared with the original meaning. In seventeen articles, the English translation of the title contained „public health“ or „health care“, while there was „medical services“ in the original. These papers were excluded from the analysis.

Overall, the literature search resulted in 32 journal articles of potential relevance to the study. After assessing the full-text versions in light of the inclusion/exclusion criteria, 9 articles were finally included in the analysis.

RESULTS

The Beginning of Reorganization, Concept of Public Health

The reorganization of the healthcare system, launched in 1995, was focused on the model of preventive healthcare^{3,4}. The role of public health is especially critical, as it serves for disease prevention, health promotion, management and analysis of the epidemiological situation, and establishment of a healthy lifestyle. The main criterion of public health priority lies primarily in the cost efficiency of preventive measures.

After gaining independence, some Post Soviet countries (including Armenia, Belorussia, Russian Federation, and Ukraine) have maintained the organizational structure and philosophy of

sanitary-epidemiological service inherited from the Soviet times. Some countries (including Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan) have set up additional structures. Georgia was the only country (except the Baltic states) to abandon the Soviet system of Sanitary-Epidemiological Service, by completely reorganizing it and establishing a new public health infrastructure. Examples of functions and structure were taken from Western European and USA models. USA Centre for Disease Control, World Bank, and WHO have significantly contributed to the shaping of a modern public health system in Georgia.

The reorganization of the Sanitary-Epidemiological Service implied the separation of supervisory (sanitary control) and executive (epidemiological supervision) functions, typical of the Soviet system. As a result of the healthcare sector reorganization, the Public Health Department and the Department for Sanitary Supervision and Hygienic Regulation were established. The Public Health Department was entrusted with the following functions.

- immunization, promotion of medical record-keeping,
- infectious and noninfectious disease monitoring,
- analysis and forecast of epidemiological situation, promotion of a healthy lifestyle.

The Department of Sanitary Supervision and Hygienic Regulation is responsible for preventing the negative impact caused by environmental factors on the health of the population, developing the sanitary-hygienic norms. There have been formed the local/regional/urban centers of the Department of Sanitary Supervision and Hygienic Regulation.

In 1997, the fundamental „Law on Healthcare“ was adopted, regulating the field of healthcare, with defining the framework for public health measures. According to this law, public health protection is „a system of state obligations, aimed at protecting, maintaining and restoring human physical and mental health by preventing diseases, studying and controlling their dissemination, establishing a healthy lifestyle, promoting a safe environment for human health.“⁴⁹

Organization of Public Health

In 1996, the *Public Health Department* was established by the Order of the Minister of Health. The objective of the Department was to improve the health of the population through medical and preventive measures. The Public Health Department was entrusted with the following functions: monitors the epidemiological surveillance and sets the priority directions, prevents socially dangerous diseases, manages and finances the state programs, keeps biostatistics, promotes healthcare, organizes the measures for the establishment of a healthy lifestyle.

One of the key objectives of the reorganization included the decentralization of the public health system¹⁰. For this purpose, a system of two-level public health services was established: at the central level – Public Health Department and at the local/municipal level – Public Health Centres. Public Health Centres (including 10 regional coordination functions) were municipal and regional organizations, responsible for public health provision among the population living within the administrative framework, in particular, they were accountable for analysing and managing the epidemiological situation, and organizing and implementing appropriate measures for disease prevention. The fundamental mission of Public Health Centres included the evaluation of public health, coordination and monitoring of the activities, and implementation of public health programs. The responsibilities of the Public Health Service were as follows: epidemiological peacefulness in the country, early identification and prevention of diseases, provision of information, prevention of public health threats and timely response to them, prevention of environmental impacts and behavioural risk factors, fundamental and applied biomedical science development

Target-program funding was defined as the form of financing based on the established share ratio of central and local state budgets. At the same time, international programs, promoting global health, were launched with the support of donor organizations. The system of health promotion, preventive examination of the population, and management of the activities for establishing a healthy lifestyle was put into operation.

Three subunits have been defined under Public Healthcare Department:

- (a) National Centre for Disease control.
- (b) The Centre for Health Promotion and Disease prevention.
- (c) Medical Statistics and Information Centre.

National Centre for Disease Control (NCDC) was founded in 1996. It coordinates the epidemiological surveillance, fights against communicable diseases and preventive activities, provides methodic and practical assistance to regional and local healthcare centres, medical institutions, conducts training for healthcare professionals, carries out field works, is equipped with national reference – laboratories, studies the cases of the epidemic outbreak and their cause-effect links. The NCDC has a network of regional branches, producing quarterly epidemiological bulletins. It coordinates the national immunization program and also, cooperates with other donors and centres of disease control, for instance, with the USA Centre for Disease Control and Prevention.

Medical Statistics and Information Centre is responsible for the collection of health statistical

data. The Centre for Health Promotion and Disease Prevention is accountable for health awareness and health promotion. In 1996, the first annual statistical Reference book was released „Health care – Georgia“, which presented the key statistical indicators of public health conditions and healthcare resources of the country. For calculation of indicators presented in the reference book, the methodology recommended by WHO is used, allowing to compare the indicators of Georgia with the indicators of other countries.

In terms of decentralization, Georgia again proved to be the only exception among post-soviet countries, where the funds out of four elements of the healthcare system (financing, Policy Development, Standard Definition, Management, and Administration) were distributed at the central municipal level, and management and administration – at central, regional and municipal levels¹¹.

The reorganization of public health soon yielded its first results. The spread of infectious diseases was significantly reduced by launching a state program of routine immunization, implementing the practice of safe injections and medical manipulations, and by introducing a safe blood program¹².

From 1995 to 1996, the campaign of mass immunization for the 3-60-year-old population was carried out with diphtheria and tetanus vaccine, with a coverage of 83% through the support of the Government of Japan, United Nations Children's Fund, USAID (United States Agency for International Development), WHO, and other organizations. With their assistance, in 1995, a serological study of immunity to diphtheria after booster dosing was conducted in Kakheti in different-age-population. It was found that the population aged 30-49 years still did not have protective immunity. Based on the study, a second booster dose of diphtheria and tetanus vaccine was administered to the contingent of this age in 1997, with a coverage of 86%. As a result, the epidemic of diphtheria has been under control since 1998¹³.

Effective anti-epidemic measures were taken during various epidemics of waterborne intestinal infections, hepatitis, and typhoid fever (Akhalsikhe, Poti, Batumi, Kobuleti, Khoni, Rustavi...). In this period, thanks to huge assistance of the government of Japan, the USA, and other countries, it was made possible to first launch the planned vaccination, and then implement a mass vaccination of the population. Due to high coverage of vaccination in June of 2002, WHO Certification Commission for the European region granted Georgia the status of a polio-free zone, which has been retained by our country to this date.

The development and implementation of a multi-year state program focused on the DOTS (Directly Observed Therapy) strategy, recommended by the

WHO, has improved the epidemiological situation in a certain way. The idea of the strategy lies in the elaboration of a perfect system to control tuberculosis, that ensures the reduction of mortality, illness, disease spread in the society, and prevention of the development of resistance to anti-tuberculosis medicines. This is implemented through identification, diagnosis, treatment, prevention of tuberculosis cases, and by carrying out standard activities of epidemiological surveillance.

Especially noteworthy is the establishment of the Lugar Centre, for which the foundation was laid by signing the agreement between the presidents of the USA and Georgia on biosafety in 1997. It dealt with the non-proliferation of nuclear, chemical, and biological weapons in the world and was one of the key components of the country's biological security. The agreement laid the groundwork for the development of this type of program not only in Georgia but in Eastern Europe as a whole. Famous Republican Senator Richard Lugar lobbied for the establishment of the centre in Georgia. In 1998, Lugar made his first visit to President Eduard Shevardnadze and decided to establish a Lugar laboratory. Considering that the Lugar Centre is one of the main and important tools of the healthcare system, in 2002, at a meeting between Richard Lugar and the Minister of State, it was agreed that the Lugar Centre would be subordinated to the healthcare sector and integrated into the public healthcare system.

As of today, the Lugar Centre is one of the best scientific research bases across the Caucasus region in the fields of biomedicine and biosafety. The Centre is equipped according to the highest standards and has been granted the third level of biosafety, meaning, that almost all kinds of microbes are studied there. As per modern classification, the third level laboratory can diagnose the coronavirus, allowing for timely detection and manage this infection. Its role is especially vital in the era of modern pandemics.

According to a logical framework, the public healthcare system of Georgia was resembling the models of the public healthcare system of the developed countries¹⁴. This relates to the responsibility and financing levels, and provision of key services (immunization, epidemiological surveillance, healthy lifestyle...)¹⁵. The principle of operation of the existing system of public healthcare was about dividing the responsibilities of key service delivery per level. Public healthcare priorities included immunization, epidemiological surveillance, oncology disease-fighting, safe blood, antidrug and traumatism prevention, the establishment of a healthy lifestyle, active case finding, and other activities¹⁶.

The programs of infectious disease prevention, chronic disease management, and healthy lifestyle, the measures that were necessary for the health of the

population living in a particular area, considering the social-economic, cultural, and natural characteristics, were financed at the local level through municipal programs. But in a number of cases, the local financing was symbolic. At the local level, there was a problem of real responsibility for public health, and lack of awareness of obligations, insufficient knowledge about public health, and respectively, adequate budgeting¹⁷.

Public health network development in Georgia was of great importance, both in terms of epidemiological surveillance and disease control system regulation, which was virtually disrupted at the regional level, and in terms of forecasting the epidemic situation and developing and implementing adequate preventive measures.

At the request of the WHO, timely receipt, evaluation, and analysis of data on the prevalence and structure of infectious diseases have been provided, enabling the timely implementation of appropriate control measures. For addressing these problems, „Epidemiology Management Program“, „Healthy Lifestyle Promotion and Disease Prevention Program“ and other preventive programs have been launched in the country, which in turn echoed the resolution of the World Health Assembly, declaring that the development of epidemiological surveillance systems and enhancement of infectious disease control at the national level based on laboratory research is the best way to prevent these diseases from spreading internationally.

Thus, as a result of healthcare system reorientation in Georgia, the groundwork was laid for a new public health system, set up on modern principles, reflecting the latest global experience. However, the key challenge in public healthcare service reorganization consisted of incomplete financing of state programs¹⁸. The Healthcare system was suffering from chronic financial deficiency, as the state frequently failed to fund the public health programs¹⁹.

The changes made by the government in 2007, the Public Health Department was merged with the National Centre for Disease Control to form the National Centre for Disease Control and Public Health. The abovementioned has virtually diminished the role and importance of public health, as the Centre for Disease Control is the only tool in the system of public health. As a result, the attention from central and local governments to public health has decreased. Moreover, the Sanitary Supervision Service was abolished and its separate functions were redistributed to different ministries and agencies. Due to the Service cancellation, various facilities (e.g. medical organizations, dental offices, beauty salons) were left unattended, with no control of service delivery quality and safety norms.

CONCLUSIONS

The role of public health is especially increasing in the modern globalized world, when the epidemics of infectious diseases and pandemics have become topical. In a globalized world, the public health challenges go beyond national borders and interests, having huge global political and economic consequences. Therefore, modern public health is reviewed in a global context and requires international regulations, transnational actions, and solutions based on coordinated cooperation among different countries of the world.

International health regulations constitute a legal framework that determines how countries should respond to the threat of diseases. Its objective includes prevention, protection and control of the international spread of the disease. Based on global regulations, the country's public health system should develop a permanent system that timely identifies and eliminates the public health risks that may lead to a mass spread of the disease.

Author Contributions:

T.V. conceived the original draft preparation. T.V., and A.J. were responsible for conception and design of the review. T.V., and A.J. were responsible for the data acquisition. T.V. were responsible for the collection and assembly of the articles/published data, and their inclusion and interpretation in this review. T.V., and A.J. contributed equally to the present work. All authors contributed to the critical revision of the manuscript for valuable intellectual content. All authors have read and agreed with the final version of the manuscript.

Compliance with Ethics Requirements:

„The authors declare no conflict of interest regarding this article“

„The authors declare that all the procedures and experiments of this study respect the ethical standards in the Helsinki Declaration of 1975, as revised in 2008(5), as well as the national law.“

„No funding for this study“

Acknowledgements:

None

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