

Public Movement for a Healthy Georgia!

**Levan Sakvarelidze National Center for
Disease Control and Public Health
Strategic Plan
2018-2022**



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Abbreviations

AMR - Antimicrobial Resistance

ANAB/ANSI – American National Accreditation Board/American National Standards Institute

CDC – Centers for Disease Control and Prevention

CIS - Commonwealth of Independent States

DTRA – Defense Threat Reduction Agency

ECDC – European Centre for Disease Prevention and Control

ECHO - Extension for Community Health Outcomes

EIDSS – Electronic Integrated disease Surveillance System

EMCDDA – European Monitoring Centre for Drugs and Drug Addiction

EMTCT - Elimination of Mother-to-child Transmission of HIV and Congenital Syphilis

EPHOs – Essential Public Health Operations

ESPAD – European School Survey Project on Alcohol and Other Drugs

EU – European Union

FAO – Food and Agriculture Organization

FCTC - Framework Convention on Tobacco Control

FIND – Foundation for Innovative New Diagnostics

GAVI – Global Vaccine Alliance

GBR – Georgian Birth Registry

GeNoC-PH – Georgian-Norwegian Collaborative in Public Health

GHSA – Global Health Security Agenda

HCV – Hepatitis C

HR – Head Quarters

IANPHI – International Association of National Public Health Institutes

IF – Impact Factor

HAI - Healthcare-associated Infections

IHME – Institute for Health Metrics and Evaluation

IHR – International Health Regulations

ISO – International Organization for Standardization

ISTC – International Scientific and Technical Center

JEE – Joint External Evaluation

MoIDPOTLHSA – Ministry of Internally Displaced Persons from the Occupied Territories, Labour, Health and Social Affairs

NCDC – National Center for Disease Control and Public Health

NCDs – Non-communicable Diseases

NEHAP – National Environmental Health Action Plan

NIH – National Institutes of Health

NIPH – Norwegian Institute of Public Health

PHE – Public Health England



PHEOC – Public Health Emergency Operations Center
PM – Precision medicine
SOP - Standard operating procedure
STCU – Science and Technology Center in Ukraine
STEPS – Noncommunicable Disease Risk Factor Survey
STI – Sexually Transmitted Infections
SWOT - Strengths, Weaknesses, Opportunities and Threats
TAIEX – Technical Assistance and Information Exchange Instrument
TB – Tuberculosis
TTI - Transfusion Transmissible Infections
UN – United Nations
UNFPA – United Nations Population Fund
UNICEF – United Nations Children’s Fund
US – United States of America
USAID – United States Agency for International Development
VPD - Vaccine-preventable Diseases
WB – World Bank
WRAIR – Walter Reed Army Institute of Research



Introduction

Health is one of the fundamental human rights. It is acknowledged by the Constitution of Georgia and international acts. Good health of the population contributes to the economic and social development of the country and is one of the major driving forces of its progress. The constitutional and international norms associated with health are reflected in the legislative acts of Georgia: "Law on Health Care" and "Law on Public Health" consider health and public health, as a system of state commitments, aiming at promotion of human health and healthy lifestyle, prevention of diseases, assessment of their distribution, control and promotion of a safe environment for human health.

Georgia in 2012, for the first time after being acknowledged as an independent state, recognized health as political priority. For the first time, it was reflected in a doubling of the health care budget and implementation of principles of universal access to medical services. Over the recent years, Georgia has made significant progress in reforming the health care system. The crosscutting process of public health reform has started, program funding increased, Hepatitis C elimination unprecedented program is underway and recovery rate of the population involved in the treatment process has reached 98%. Moreover, the country is continuously supplied with vaccines, within the Association Agreement between the EU and Georgia the process of harmonization of the legislation of Georgia with EU legislation on reduction of hazardous environmental impact has started.

The Levan Sakvarelidze National Center for Disease Control and Public Health (NCDC) contributes to the development of public health in the country and the scope of its activities is oriented on preventive medicine. Over the last five years, the NCDC budget has significantly increased and reached 47.95 million GEL from 14.54 million GEL. A number of successful projects and scientific research have been implemented. However, the challenges still remain. Much more is to be done in the field of health care to align with successful countries.

In order to continue the aforementioned activities, to achieve outlined priorities and objectives, NCDC has developed a strategy for 2018-2022, based on the Georgian Government's Program and Action Plan, the MoIDPOLHSA priorities, international experience, evidence-based scientific achievements, the UN Sustainable Development Goals and the commitments within the framework of the Association Agreement between the EU and Georgia. Additionally, strategies initiated by NCDC and approved or existing as a draft at different levels (ministry, government) are taken into consideration: "State Strategy for Tobacco Control of Georgia" and "Tobacco Control Action Plan for 2013-2018"; "National Hypertension Strategy"; "Response Plan on Especially Dangerous Pathogens and Biological Incidents"; "Preparedness and Response Operating Plan for Seasonal Influenza in Georgia"; "Response Plan on Biological Incidents, Epidemics / Pandemics"; "National Strategy for the Prevention and Control of Non-Communicable Diseases for 2017-2020"; "Cancer Control National Strategy"; "National Action Plan for the Environmental Health of Georgia for 2018-2022"; "National Strategy for Tuberculosis Control for 2016-2020"; "National Strategy for HIV / AIDS Prevention and Control for 2016-2018"; "National Strategy on Elimination of Hepatitis C in Georgia for 2016-2020"; "National Strategy for Antimicrobial Resistance for 2017-2020" and "Action Plan for Elimination of AIDS and Syphilis Vertical Transmission". The present document covers all directions of NCDC functions and objectives, promotes the agreed and efficient activities of all units of the organization, active collaboration with international partners, with their support the current results have been achieved and cooperation will be continued. NCDC strategy outlines the center's mission, vision, and mandate.

After approval of the document, NCDC will continue working on elaboration of a detailed annual action plan. The monitoring group will be set up, which will submit to the Supervisory Board an annual report on the implementation and progress of the Strategic Plan. It is important that the strategy can be modified in accordance with the current reality and requirements.

I. Overview of Current Situation

On January 1, 2018 the population of Georgia was 3,729,600¹. Urban population share was 57.2%². Female population constituted 52.1% of the total number; males - 47.9%. According to the World Bank classification, Georgia is a low-middle-income country (GDP per capita at current prices 4067.7\$, 2017). However, from the demographic viewpoint it is similar to the developed countries (fertility rate 2.24, 2016), the number of families with one and two children, as well as the share of the older population increases. In Georgia the burden of mortality is mainly caused by non-communicable diseases and the biggest share takes ischemic and cerebrovascular diseases and hypertension. However, Tuberculosis (mostly multi-resistant forms), HIV infection and Hepatitis remain the country's public health challenge. Life expectancy is 72.7 years which exceeds the CIS countries and is lower than the average rate in the European region. Maternal mortality ratio is 23/100,000 live births, children under 5 mortality ratio is 10.7/1,000 live births (2016).

Over the recent years Georgia set as a priority improvement of population health of the country. State programs aims at improvement of access to universal health care and reduction of financial risks associated with health. In Georgia, the total health care expenditures are growing each year. Georgia, from its own economy, spends on healthcare almost as much, as the European Region's high-income countries (8%-9%). However state expenditure on health, as a share of the GDP, is still low (in 2012 - 1.7%, in 2016 - 3.2%), but the share of the out-of-pocket payments in total health expenditures has significantly decreased from 73% to 55%. Since 2013, the Government of Georgia has laid the foundation of the health policy oriented on population health and well-being - the universal health care program became operational, that significantly increased the utilization, availability and quality of medical services. As a result of improved quality and efficiency of perinatal services, Georgia successfully achieved the MDG 4 – reduction in mortality rate by 2/3 in children under 5. Strict legislative regulations have been launched in relation to tobacco consumption; In 2017 the state launched the program, that considered provision of medicines to socially vulnerable population with chronic non-communicable diseases (ischemic heart disease, hypertension, heart failure, asthma, diabetes type 2, and thyroid gland diseases). New technologies of data accounting (Population Cancer Registry, Pregnant and Newborn Surveillance Electronic System, Hospital Registry, etc.) has been successfully implemented. Since 2014, Georgia's routine statistical data has been used in UN Children's Fund, WHO, World Bank and in UN Children's Mortality Reports. The Human Development Index has increased from 0.745 (2013) to 0.769 (2015) in recent years.

II. Vision, Mission, Mandate

Vision: “Our Knowledge - for Public Health”

Mission: Protection and improvement of health of the Georgian population through scientific, evidence-based prevention, preparedness and timely response to public health threats.

¹ National Center of Statistics of Georgia, 2018. geostat.ge/

² National Center of Statistics of Georgia, 2017. geostat.ge/

Mandate:

- Early detection and prevention of diseases;
- Monitoring, evaluation and analysis of the health status of the population and risks;
- Health promotion, education and awareness raising of the population;
- Assessment of environmental hazards affecting human health;
- Science and education promotion in public health;
- Promotion of development of state rules, standards and regulations for public health, biosecurity and laboratory activity;
- Preparing for and responding to public health emergencies and disasters.

A precondition of implementation of the Center's mandate is a strong infrastructure, modern laboratories and highly trained human resources.

III. Major Strategic Directions

In response to the current challenges and the country's development goals, to pursue NCDC vision, the Center has identified seven key directions with relevant objectives and tasks that will be the basis for development of an annual action plan based on human, material and financial resources. In the course of strategy implementation, the key milestones of public health development and promotion will be reached – implementation of "One Health" concept in communicable diseases surveillance; achievement of the target vaccination indicator against all antigens; surveillance of non-communicable diseases, improvement of prevention and control; reduction of perinatal death cases through active supervision; timely detection and adequate management of risk factors and complications; improvement of environmental health; promotion of continuous education development and introduction of up-to-date technologies; transfer of paper-based statistical reporting to an e-Health platform, introduction of new thematic registries , development of electronic modules and mobile health platforms, developing a new strategic plan for public health management, development of appropriate labor resources.

Major Directions	Strategic Priorities
Communicable diseases	<i>Decrease morbidity, disability and mortality caused by communicable disease</i>
Non-communicable diseases	<i>Decrease morbidity, disability and premature mortality caused by non-communicable diseases</i>
Environment and health	<i>Prevent morbidity, disability and mortality caused by climate change and environmental factors</i>
Public health emergencies	<i>Strengthen preparedness capacities for rapid and effective response to public health threats</i>
Scientific activity	<i>Develop applied and fundamental biomedical and biotechnological scientific research potential</i>
Health information systems	<i>Develop electronic information systems</i>
Public health care management	<i>Promote development of public health care system management</i>

1. Communicable Diseases

Strategic priority: Decrease morbidity, disability and mortality caused by communicable disease

1.1 Overview of Current Situation

Prevention and control of communicable diseases are public health priorities. Over recent years Georgia achieved significant progress in terms of communicable diseases' prevention and control, which was influenced by the onset of a universal healthcare program in 2012, strengthening of realtime surveillance capacity, modification in regulations for the use of antibiotics, universal access to hepatitis C treatment and expansion of an immunization program (introduction of new vaccines, continuous supply of vaccines and strategic sera). However, risks caused by communicable diseases are never static and remain as a challenge for public health in Georgia, as well as worldwide.

Spread of communicable diseases is a significant threat for a healthcare system and society. Landscape of communicable diseases and transmission trends, including new threats such as emerging, reemerging, forgotten diseases, issues of biosafety and bioterrorism and climate changes, require persistent review of the current surveillance system and readiness for management and prevention of communicable diseases, considering the geographical peculiarities of the country. Technologic development, support in introduction of new/less used vaccines, high coverage of the target population with traditional vaccines and changes in population behaviour – provide opportunity to identify/perform the most suitable interventions. Population morbidity in the world defines the rapid spread of communicable diseases. A robust communicable diseases control system which will effectively identify, restrain and control the problems related to the new and reemerging diseases, as well as ensure low morbidity rates for endemic diseases in Georgia, is a modern challenge.

1.2 Strategic Objectives

1.2.1 Capacity building of surveillance and sustainability of communicable diseases

Communicable diseases surveillance, as an evidence of prevention and control, requires the use of “One Health” principles – determining the interactions between the human and animal health and environment, accurate identification of food safety and human health interactions. Integrated approach in surveillance is based on intersectoral relations, information exchange and joint interventions. NCDC, as a leading institution in communicable diseases surveillance, prevention and response in Georgia, with coordinated work of involved parties, constantly seeks ways to improve capacities and protect population's health in the country.

Significant investments were made in recent years to strengthen the surveillance system, although unsolved issues still remain and new challenges arise. NCDC continues to manage communicable diseases in Georgia in compliance with international requirements.

Planned activities:

- **Adaptation, sustainability, flexibility and efficiency of the electronic integrated disease surveillance system (EIDSS)** – development of capabilities at both the national and local levels for the full operation of the system throughout the country is needed. In close cooperation with partner organizations, NCDC will also ensure that EIDSS meets all requirements on

transmittable diseases in the country, which in turn will help the NCDC to perform effectively the leading role in operating of the Electronic Integrated Disease Surveillance System.

- **Development/update of guidelines for communicable diseases surveillance** – update all guidelines and recommendations for communicable diseases surveillance in accordance with international standards. Priorities and a list of diseases under surveillance will be reviewed or updated periodically (or when requested by NCDC).
- **Development/Update of notification/reporting procedures for communicable disease.** Notification, reporting, prevention, control and response procedures will be updated as requested by the surveillance system; The relevant measures will be taken at all levels of the surveillance system to provide information regarding changes.
- **Development of technical capabilities to prepare epidemiological data analysis and reports.** The Scientific Structural unit of NCDC will be significantly strengthened, thus analyzing and interacting will be linked to scientific potential development.
- **Strengthening HIV/AIDS surveillance.** NCDC has taken responsibility for the management of the national HIV/AIDS surveillance system. The changes were made because of the routine surveillance system reform followed by the development of the national HIV/AIDS plan and recommendations for the HIV/AIDS surveillance and the establishment of an electronic database. The information on all HIV tested individuals is collected in the database and a multilateral analytical report is prepared automatically. During the next five years, NCDC will also carry out the following activities:
 - Regular assessment of the epidemiological situation and data analysis;
 - Preparing recommendations for modification of variables, indicators or definitions for epidemiological analysis;
 - Establishment a flexible online portal for HIV infection/AIDS monitoring and evaluation at the country level in order to increase awareness of stakeholders;
 - Activate the Disease Management Monitoring and Evaluation System.

The NCDC will also play the focal point role at the state level. It will submit reports regarding HIV infection to international organizations and provide reliable information exchange at international level.

- **Development/adaptation of the Tuberculosis Surveillance System:** NCDC will continue providing services implemented in recent years in the field of TB management and surveillance:
 - Support for improvement of patients' adherence to treatment;
 - Support for the introduction of new drug regimens against drug-resistant tuberculosis;
 - Expansion of the contacts research area, to augment tuberculosis case detection in order to involve them in a timely manner in the treatment process;
 - Revision, update and implementation of surveillance guidelines;
 - Operational surveys - for the purpose of determining efficiency of program activities;
 - Expansion of lab testing throughout the country by GeneXpert, which is considered as a fast and unique method for TB diagnosis, as it also determines the resistance to Rifampicin (the most active first line drug against tuberculosis);
 - Development of capabilities for genotyping in the laboratory of NCDC Lugar Center.

Key indicator:

All tools developed for surveillance are functioning for all stakeholders and the data indicator at the country level in most cases is >70%: as to separate nosology's indicators they can be higher.

1.2.2 Implementation of “One Health” principles into the communicable disease surveillance

NCDC will apply “One Health” principles with the purpose of reducing occurrence of diseases such as Anthrax, Brucellosis, Crimean-Congo Hemorrhagic Fever, and Leptospirosis. Over the next five years, surveillance with a “One Health” approach will be used for tracking each case of notifiable zoonotic disease.

Planned Activities:

- Surveillance with a “One Health” approach on a single case of a notifiable zoonotic and vector-borne disease;
- Establishment and support of epidemiologic and laboratory data exchange between these two sectors in order to provide effective and adequate responses on food safety-related issues and identification of zoonotic disease, as well as reducing disease spread.

Key Indicator:

Approximately 40% of notifiable zoonotic and vector-borne diseases are investigated by all stakeholders.

1.2.3 Elimination/eradication of important diseases determined by global or country's strategies

Planned Activities:

- Maintenance of **Poliomyelitis**-free territory by ensuring high coverage of vaccination;
- **Elimination of Measles/Rubella/Congenital rubella syndrome** by systematically following steps of the strategic plan; over the next 5 years, NCDC will: pursue the measures described in the national guideline on “Surveillance on Measles, Rubella and Congenital Rubella and Control of Outbreaks”; achieve and maintain planned immunization coverage of MMR at 95%, also prepare a national elimination framework by the end of 2018;
- Maintenance of the status a **Malaria**-free territory – for this purpose, it is necessary to: maintain the sustainable policy directed towards suppressing renewed spread of malaria; sustain and improve the epidemiologic surveillance system which is aimed to prevent malaria in the country; and provide robust surveillance on implementation of the malaria prevention program;
- **Elimination of mother-to-child transmission of HIV and congenital syphilis (EMTCT)**. For achieving this goal, the indicators that were provided by WHO were processed and adapted to Georgian reality. A tool for determining rates of sexually transmitted infections has been implemented - STI Spectrum, the results of which will be used to develop the elimination strategy and action plan for EMTCT of HIV and congenital syphilis. In order to meet the EMTCT verification indicator requirements and nominate itself for elimination validation, intensified work and establishment of well-organized and efficient monitoring and surveillance system is necessary. It is planned to submit the aforementioned for WHO validation by 2020.
- Identification of infected persons and further control and prevention of disease transmission in accordance with **Hepatitis C (HCV)** elimination strategy.

Following the steps of the WHO's global strategy targets for viral hepatitis health sector, Georgia plans to achieve the following objectives by 2020:

- Identify 90% of those people living with HCV.
- Treat 95% of those with chronic HCV.
- Cure 95% of those treated.

According to Hepatitis C Elimination Strategy, NCDC's role and responsibility is to identify the infected and prevent disease transmission. To achieve this goal, the activities are performed in the following direction: a) universal screening of the population; b) confirmation of infection status among screening-positive cases; c) provide safe blood and organ donation; d) reduction of disease transmission during both for medical and non-medical activities; e) determine hepatitis B prevention capacity and increase the availability among hepatitis C-infected individuals.

As an addition to the strategy for the next 5 years, identified individuals will be supported with the purpose of enrolling them into the treatment program. By 2021-2022, it is planned to repeat the hepatitis C seroprevalence study among the entire population.

- **Elimination of human cases of rabies.** In order to achieve elimination of human rabies, it is necessary: to make anti rabies post-exposure prophylaxis available nationwide; establish surveillance on rabies cases with "One Health" principle; establish effective vaccination against rabies in animals, especially among dogs; raise awareness of the general population.

NCDC is planning to initiate a project of legal action for 2019-2022, enabling the establishment of measures against rabies that will take the objectives of consideration of a global initiative roadmap and global experience in developing effective and safe immunization programs against rabies in humans.

Key Indicators:

- According to the nosology global and/or national targets have been met - no occurrence of cases of poliomyelitis;
- Eradication of local transmission of measles/rubella/congenital rubella syndrome has been achieved;
- No occurrence of endemic cases of malaria; elimination of human cases of rabies and decreasing tendency of post-exposure prophylaxis is described;
- According to hepatitis C elimination strategy – 90% of the target population has been studied.

1.2.4 Antimicrobial Resistance and Infection Control

NCDC's function is to determine prevalence and trends of healthcare-associated infections (HAIs), as well as estimation of antimicrobial resistance (AMR), which is crucial for implementing control measures of nosocomial infections.

Planned Activities:

- Periodic renewal of control of HAI guidelines and recommendations for medical facilities;
- Plan and conduct studies to obtain more information on HAIs;
- Plan and conduct studies on AMR;
- Advocacy/support of immunization for healthcare service providers on vaccine-preventable diseases (Hepatitis B, MMR, Influenza) that have potential of nosocomial transmission;

- Share national AMR and HAI surveillance data with international stakeholders.
NCDC, through consultations and trainings, will assist healthcare providers in implementing and strengthening infection prevention and control.

Key Indicators:

- The National AMR profile is available to end-users;
- Raised awareness of antimicrobial resistance among society and medical personnel.

1.2.5 Strengthening and development of safe blood systems

Safety of blood and blood components is one of the major priorities of the Georgian healthcare system which aims to prevent the spread of TTI, ensure high quality and safety of blood components, reach optimal demand-supply balance for blood reserves and implement sustainable safe blood policies based on ethical, economic and social factors. It should be noted that there are certain challenges in this regard, which are mostly related to the practice of paid donations and a lack of effective surveillance and quality control systems, which result in a high prevalence of TTI nationwide. According to the NCDC and CDC 2015 seroprevalence population study results, out of Hepatitis C risk-factors, blood transfusion was determined to be the most statistically reliable risk factor following injection drug use (in the study population, 21.4% of people positive for Hepatitis C antibodies noted a minimum of one blood transfusion episode in their lives).

To ensure the prevention of blood-borne infections and the safety of blood components, a special chapter was devoted to safe blood strategy in the national Hepatitis C elimination strategy which includes a fundamental reforming of blood safety, harmonization of a safety regulating normative base with EU directives, implementation of modern blood production standards and a switch to a voluntary donation system. As part of the EU association agreement, the TAIEX mission took place aiming to develop and harmonize blood safety systems to EU standards, which evaluated the existing situation and based on their recommendations, new steps for using EU institutions and instruments to improve blood safety processes have been planned.

NCDC along with MoIDPOTLHSA and entities under its control, will continue to work closely with the EU, CDC and other stakeholders to carry out the activities planned through the safe blood strategy.

Planned activities:

- Supporting the implementation of effective authorization, inspection and surveillance systems for blood production establishments according to NCDC competences and the upgrading of a unified blood donor database;
- Developing national standards for the blood transfusion service (BTS), which includes all parts of the transfusion chain:
 - Donor selection, blood collection, testing, processing, storage and distribution standards;
 - Technical requirements for blood and blood products;
 - Standards for blood establishment quality control systems and specifications;
 - Transfusion traceability and notification mechanisms for serious side effects and adverse events;
 - Blood and blood product clinical usage standards.

- Implementing the high-technological methods (such as nucleic acid testing) for testing for TTI on the centralized system basis;
- Implementing the sustainable educational and promotional activities and legislative provisions to ensure a switch to a voluntary donation system and reach a 100% level of voluntary, unpaid donations;
- Implementing the EU tools (TAIEX, Twinning, others) to develop the safe blood system.

Key indicators:

- A National BTS regulatory body is determined (with blood establishment authorization/licensing and inspection functions) and with participation and supportive activities of NCD;
- Implemented blood production and clinical usage national standards, which are in full compliance with requirements of the EU association agreement directives;
- No less than 70% of voluntary donations by 2020, and a fully implemented voluntary blood donation practice in 2022;
- Implemented modern standards of blood production and high-technological testing methods on the centralized system basis;
- Decrease in prevalence of TTI in the donor population.

1.2.6 Immunization

Proper management of the immunization system in the country is only possible with joint efforts of various stakeholders on all levels and sectors. Despite the accessible, universal healthcare system and other activities, the immunization coverage targets are still to be met for a number of districts and require immediate action. To achieve the set goals, NCDC is actively working with all relevant stakeholders.

Planned activities:

- **Improve management of the immunization program:** The Comprehensive Multi-Year Plan (2017-2021) was developed, which is in line with global and regional vaccine action plans and covers all important components of the immunization system in the country, including goals, activities, budgeting etc. The main goals of the program are to: sustain polio-free status; measles/rubella elimination; control VPDs; achieve coverage targets at all administrative levels; make evidence-based decisions when considering introduction of new vaccines; achieve financial sustainability of NIP.
To achieve financial sustainability, it is crucial to ensure: the “cold chain” vaccines and its supplies logistic system is improved and updated; safe immunization practices are in place; the exiting legal base is reviewed/updated; new vaccines introduced; specialists receive continuous trainings; supportive supervision carried out; communication activities strengthen; maintain existing financing and increase financial resources required to meet commitments; consider mid-term risk factors of budget planning and to increase buffer stocks and minimize the negative impacts increase buffer stocks of vaccines and consider switching to advance procurement mechanisms.
- **Assessment of factors hindering NIP:** Based on evaluations, surveys and regular active/passive monitoring visits carried out in 2015-2016, the strengths and weakness of NIP were identified, the comprehensive multi-year action plan and national

communication strategy for immunization were developed, which enable the stakeholders to realise the importance of vaccination in the light of ensuring the better health of future generations and overcome the still existing negative attitudes, fear and hesitancy, on the influencers of the lower coverage rate.

- **Further improvement of the Immunization Information System:** Further develop the Immunization Information System and introduce the modern technologies to respond to the recent healthcare reforms.
- **Optimization of the “cold chain” system:** To update the “cold chain” system in line with the international requirements and standards, considering the new vaccine introduction to the NIP and future developments. Ensure proper logistics of vaccines and immunization supplies, including distribution practices. The NCDC plans to upgrade the “cold chain” equipment and provide technical assistance to district public health centres, by developing/introducing the standard operational procedures and trainings.

Key indicator:

Sustain the high coverage rates of target populations and ensure the improving trends for underperforming areas.

1.3 Major Risks and Challenges

- Sustainability of the surveillance systems;
- Lack of a continuous education system for the immunization specialists;
- Possible threats to re-introduce the wild or vaccine derived poliovirus due to globalization;
- Risks of local measles/rubella outbreaks and secondary cases linked to imported cases, due to still existing, unimmunized small cohorts which may be vulnerable to these diseases;
- Eradication of malaria locally and lack of imported malaria cases creates deficit of the healthcare workers;
- Eradication of malaria locally and lack of imported malaria cases creates a gap for HCWs ability to diagnose and identify, which itself poses the threat of an increased number of secondary cases associated either with late onset of specific treatment or imported cases;
- Lack of knowledge, attitudes and stigma among the population and HCWs as a possible barrier to ensure institutionalization of the prophylaxis of congenital syphilis;
- Improper reference of positive cases revealed by hepatitis C screening for further examinations and treatment. Also, the lack of knowledge, stigma and attitudes towards the hepatitis C problem in the community;
- Lack of awareness on nosocomial transmission of vaccine preventable disease.

2. Non-communicable Diseases

Strategic priority: Decrease of morbidity, disability and premature mortality caused by non-communicable diseases

2.1 Overview of Current Situation

Non-communicable diseases (NCDs) represent an important global health challenge. An increasing trend of mortality and morbidity caused by this group of diseases is a burden for both, the population and the healthcare system. Therefore, it is a hindering factor for global, social and economic development.

Major NCDs - cardiovascular diseases, cancer, chronic respiratory diseases and diabetes, are characterized by shared risk factors: tobacco use including second hand smoke, unhealthy diet with high content of fat, salt and sugar, low physical activity and excessive alcohol use. These four very important risk factors together with intermediate risk factors (obesity, hypertension, high blood glucose and cholesterol) became highly important and acute health problems.

Considering the current burden of non-communicable diseases, this country is continuously developing its policy and implementing effective interventions in order to improve NCD surveillance, prevention and management. By decree #2 approved on January 11, 2017 by the Georgian government, “Non-communicable Disease Prevention and Control National Strategy and 2017-2020 Action Plan”, is based on WHO “Non-communicable Disease Prevention Control Global Action Plan for 2013-2020” and evolving main principles of WHO European office strategy “Health 2020”. According to the action plan in the Association Agreement between the EU and Georgia, collaboration includes NCDs prevention and control, introducing healthy lifestyle by promoting physical activity and considering the main determinants (food, alcohol, drug and tobacco use). Work for strengthening NCDs prevention and control is conducted in multiple directions – non-communicable diseases and trauma, maternal, child and reproductive health, health promotion, environmental health and tobacco control.

2.2 Strategic Objectives

2.2.1 Strengthening surveillance of NCDs and its risk factors, trauma

Planned activities

- Evaluating the present NCDs and traumatism surveillance system;
- Strengthening/optimization of NCDs and traumatism surveillance based on various surveillance systems – routine statistics, registries, sentinel surveillance, data from national programs, surveys;
 - Development of registries – data analyses of present registries (cancer registry and GBR), development of concept and design for future registries (e.g. trauma registry, diabetes registry, etc.), defining priorities and financial needs;
 - Epidemiologic analyses of data collected by various national programs;
 - Strengthen present sentinel surveillance systems (CDC/NCDC joint project “Strengthening of micronutrient deficiency surveillance in Georgia”), adding sentinel sites and indicators, expansion of population and development of other directions for sentinel surveillance - defining priorities and financial needs;

- Establishment of NCDs risk factor survey (STEPS) as a non-communicable diseases surveillance system, which implies analyses of STEPS 2010 and 2016 surveys, working on scientific papers based on STEPS 2010 and 2016 survey data, re-conducting of survey in 2010-2021 and identification of financial needs;
- Execution of other surveys in order to study NCDs and their risk factors, which implies analyses of the results from conducted research, working on scientific papers based on the survey data, collecting information on non-communicable diseases and its risk factors while conducting other studies;
- Advocating relevant legislation amendments in order to improve surveillance for NCDs and its risk factors, e.g. advocating relevant amendments in order #108 (19.03.09) by MoIDPOTLHSA regarding the rule for administration of in-patient medical documentation in healthcare institutions and order #01-42/n (15.08.11) by MoIDPOTLHSA regarding “The rule for administration of out-patient medical documentation” for improving surveillance of trauma and mortality caused by car accidents;
- Defining priorities and financial needs for improving NCDs and trauma prevention and control;
- Defining and evaluating economic burden for NCDs using so called “Investment case” methodology, identifying advantages of implementing priority interventions and evaluating inactivity costs by involving United Nations Development Program, WHO international experts and UN team;
- Elaboration design for NCDs and trauma prevention and control national programs;
- Implementation activities defined under 2017-2020 NCDs for prevention and control of national strategy and action plan within the NCDC competence;
- Preparing meetings of the multisectoral coordination board for NCDs prevention and management with NCDC involvement as a secretariat, within the NCDC competence;
- Advocating strengthening of NCDs and trauma prevention and control both countrywide and on a local level within primary healthcare and public health sectors;
- Developing technical capabilities for preparing epidemiological data analyses/reporting on NCDs and their risk factors, trauma;
- Advocating creation of sub component(s) for NCDs prevention and control within the Health Promotion State Program;
- Involving in international reporting within the NCDC competence;
- Advocating creation of a proper system for preparing human resources, continuing education and professional retraining on NCDs and its risk factor surveillance, prevention and control.

Key indicators:

Systems for NCDs and its risk factors and trauma surveillance are functioning, results are analyzed, recommendations are set; actions planned under the NCDs prevention and control 2017-2020 national strategy are implemented.

2.2.2 Maternal and child health, reproductive health

Planned activities:

- Analyzing the efficient intervention execution challenges in order to provide high quality service for maternal and child health;

- Based on various surveillance systems, strengthening/optimization of maternal and child health, reproductive health surveillance – routine statistics, registries, sentinel surveillance, data from national programs, surveys;
- Developing registries – analyses of GBR data, creating concept and design for future registries, identifying priorities and financial needs;
- Strengthening surveillance for mortality of reproductive age (15-49 years) woman and children under 5 years, using EIDSS;
- Observing and controlling (recounting) of maternal and child health, reproductive health indicators, based on routine data quality evaluation protocol;
- Participating in routine data reporting instrument overview;
- Supporting maternal and child health, reproductive health data collection by using tailored studies;
- Epidemiologic analyses of collected data by various state programs;
- Developing of present sentinel surveillance systems (CDC/NCDC joint project “Strengthening of micronutrient deficiency surveillance in Georgia”), adding sentinels and indicators, expansion of population and development of other directions for sentinel surveillance - defining priorities and financial needs;
- Executing of various surveys in order to study maternal and child health, reproductive health, which implies analyses of the results from conducted surveys, working on scientific papers based on the research data, collecting information;
- Advocating relevant legislation changes in order to improve surveillance for maternal and child health, reproductive health;
- Strengthening perinatal mortality surveillance;
- Active collaboration with the maternal and child health country coordination board within the NCDC competence;
- Preparing and executing a communication campaign in order to increase public awareness, education, communication and behavioral change on maternal and child health and reproductive health issues;
- Developing technical capabilities for preparing epidemiological data analyses/reports on maternal and child health, reproductive health;
- Advocating the creation of sub components on maternal and child reproductive health within the health promotion state program;
- Involvement in international reporting within the NCDC competence;
- Advocating strengthening of maternal and child health, reproductive health surveillance, prevention and control countrywide and locally within primary healthcare and public health sectors;
- Advocating the creation of a proper system for preparing human resources, continue education and professional retraining on maternal and child health, reproductive health surveillance, prevention and control.

Key indicators:

- Maternal and child, reproductive health surveillance system is functioning, results are analyzed, recommendations are set;

- Published Annual Perinatal Report.

2.2.3 Health promotion

Planned activities:

- Working on the Health Promotion National Multisectoral Strategy and Action Plan, initiating the active engagement of stakeholders in the drafting process, supporting the adoption of the strategy and action plan;
- Promoting a healthy lifestyle in the population through the improvement of the supportive environment for changing specific behavioral risk-factors;
- Collecting, analyzing and evaluating the data/evidence on the lifestyle and behavioral specifications of the population (routine statistics, registries, state programs, specific research);
- The evidence-based modification of specific behavioral risks and preparing legislative initiatives and recommendations for supporting the formation of a healthy life style;
- Increasing awareness and education of the population, different stakeholders and partners on the health issues, through the well-organized educational, information and communication activities, as well as social marketing strategies;
- Elaborating and implementing advocacy instruments with the stakeholders and professional associations as well as policy-makers at the state and municipal level, decision-makers and leaders of religious groups, for promotion of different communication activities, including the allocation of resources;
- Organizing social mobilization activities, events and international days;
- Developing technical capacities for strengthening health promotion;
- Advocating different priority sub components and growing funding of the health promotion state program;
- Advocating health promotion, strengthening prevention and control of diseases and risk-factors at the state and local level, particularly within primary healthcare and public health sectors;
- Advocating the creation of an orderly system for preparing human resources, continue education and professional retraining on health promotion, prevention and control of diseases and risk-factors.

Key indicator:

- Health promotion state program with growing financing and a spectrum of covered priority directions;
- Adopted and financially approved Health Promotion National Multisectoral Strategy and Action Plan.

2.2.4 Tobacco control

Planned activities:

- Implementation of the activities under Tobacco Control National Strategy and Action Plan 2013-2018, within the competence;
- Preparation of the sessions of the State Commission on Strengthening Tobacco Control Measures and participation in the sessions within the competence, as a commission secretariat;
- Development of the Tobacco Control State Strategy 2019-2023 and Multisectoral action plan;
- Implementation of the ongoing international projects and working for the adoption of the new projects;

- Conducting different surveys;
- Promotion of the Tobacco Control strengthening measures, that is in conformity with the Association Agreement between the European Union and Georgia and its National Action Plan for 2017, and providing international reporting;
- Fostering partnership with local and international organizations;
- Enhancement of the Tobacco Control component of the Health Promotion State Program and advocating growing financing and support for the tobacco control group;
- Participating in the development and implementation of new legislative amendments;
- Ensuring the functionality of tobacco Quit line “116001“, tobacco cessation mobile application “I am quitting” and mobile application for responding to the violations of the law on tobacco control;
- Geographical and financial accessibility for the brief counselling on tobacco cessation and treatment on tobacco dependency, including medication.

Key indicators:

- Tobacco control is strengthened;
- The Multisectoral Action Plan for 2019-2023 of the Tobacco Control Strategy is adopted and financially approved;
- The planned activities are being implemented. The tobacco control component of the Health Promotion State Program is strengthened technically and financially.

2.3 Major Risks and Challenges

- Low priority of preventive medicine and public health;
- Incomplete monitoring of non-communicable diseases;
- Lack of engagement of public health municipal centers in the prevention and control of NCDs, maternal and child health, reproductive health and health promotion;
- Absence of continuous professional development;
- Incomplete surveillance and response to perinatal death cases;
- Incomplete registration of death cases of reproductive age women and children under 5 years in the EIDSS;
- The problems related to the timely and adequate management of early detection of risk-factors and complications;
- Low budget for health promotion activities;
- The effective monitoring of tobacco control legislation, for which the coordinated action of different agencies, as well as the active participation of the society is very essential;
- The absence/lack of financial resources for implementing a systematic, continuous (permanent) media campaign for raising efficiency of health promotion popularization;
- Non-integration of public health and primary healthcare programs;
- Absence of the proper system for preparing human resources, continuing education and professional retraining;
- Low coverage of the cancer screening; low level of awareness in the population about the importance of the cancer screening;
- The lack /absence of updated training programs.

3. Environment and Health

Strategic Priority: Prevent morbidity, disability and mortality caused by climate change and environmental factors

3.1 Overview of Current Situation

Environmental and climate changes affect many aspects of life that are closely related to human health. Environmental risk factors - air, water and soil pollution, impact of chemical substances, ultraviolet radiation and climate change contribute to more than 100 diseases and types of injuries. Climate change and its impact on various aspects of life is the most important contributor to global burden and mortality, that includes food, transmissible and other infectious diseases, and non-communicable diseases.

In 2016 WHO launched a new report "Preventing diseases through healthy environments: a global assessment of the burden of disease from environmental risks".

The primary message emerging from this new global assessment is that premature death and disease can be prevented through a healthy environment and reduction of the impact of risk factors. The seriousness of ecological consequences is insufficiently perceived by societies on the background of socioeconomic conditions in the country.

3.2 Strategic Objectives

3.2.1 Implementation of the National Environmental Health Action Plan (NEHAP) and Strategy. Fulfilment of the commitment of the "Ostrava Declaration" of the 6th Ministerial conference on Environment and Health.

Under the support of WHO the NCDC worked out the National Environmental and Health Action Plan (NEHAP), goals and objectives of which are in compliance with the Associated Agreement between the European Union and the European Atomic Energy Community and their Member States, on the one hand, and Georgia on the other hand.

The Strategic Objectives of the National Environmental and Health Action Plan are the following:

1. Improve access to safe water, sanitation and hygiene for all, including every child;
2. Improve access to a healthy and safe environment to ensure increased physical activity for children and young people;
3. Reduce the harmful impact of outdoor and indoor air pollution on the health of the population.
4. Prevent morbidity caused by chemical substances;
5. Integrate health issues into Climate Change Adaptation and Mitigation Policies.

Planned activities:

- Implementation of activities jointly with institutions and agencies responsible for the implementation of the activities under the objectives and goals of Strategic Intervention;
- Initiation of relevant legislative amendments for implementation of the NEHAP and Strategy;
- Launching of a chemical substance registry demo version, which will improve registration of disinfectant solutions through the "united window" principle.

Key indicators:

- Annual Report on Implementation of the NEHAP and Strategy;

- National portfolio of actions related to the environment and health sphere;
- Comprehensive activation of the Chemical Substance Registry, covering $\geq 90\%$ of customers.

3.2.2 Strengthening the existing health system at the national level

In order to develop and strengthen the existing "Environment and Health" governing system in Georgia, a project proposal for an EU-assisted Twinning project "Institutional Strengthening of Environmental Health System in Georgia" was prepared. In accordance with the criteria of the project, the consortium of Italy, Poland and Great Britain were selected from EU countries in 2017. Upon completion of the project, it will be possible through the implementation of legislative amendments to create and implement a new environment and health system - similar to the relevant EU services which will respond to modern challenges.

Planned activities:

After completion of the Twinning project package of obligations, objectives and responsibilities of all stakeholders/agencies/bodies shall be determined at the national and local level. Accordingly, the environmental health system should provide:

- Analysis of environmental risk factor monitoring data and risk assessment;
- Environmental impact assessment on human health;
- Feedback between monitoring outcome and surveillance aimed at reducing or avoiding exposure to risk, dissemination of information to decision makers and the population as a whole;
- Preparation of technical and administrative personnel for the effective implementation of environmental health policies;
- Elaboration of projects of legislative acts and coordination of implementation of obligations of each agency in the field of environmental health. Preparation and publication of progress reports.

Key indicator:

Developed and strengthened environmental health system in accordance with the Twinning's project recommendations.

3.2.3 Set up of a coordinated, consistent, evidence-based policy and strengthen inter-sectoral cooperation in the field of environmental health

Planned Activities:

In order to exercise an integrated policy between the environment and health sectors, the following tasks are expedient to perform:

- Coordination of goals and activities;
- Step by step development of an integrated information system between health and the environment;
- Development of environmental health indicators;
- Development of a united Methodology and System of Analysis to assess environmental impact on human health;
- Informing and raising awareness of the public;
- Implementation of the obligations of the "Ostrava Declaration", introduction of modern approaches for achieving sustainable development goals;

- Set up joint measures with health services and develop joint programs to minimize environmental risk factors.

It is necessary to actively support the existing and emerging research in the field of environment and health to achieve sound evidences which will guide in making of political decisions and implementation of preventive measures on the basis of the practiced European environmental and health inter-sector inclusive platform, aimed at implementation of the Agenda of Sustainable Development 2030.

In order to reduce health risks associated with the environment it is important to strengthen healthcare functions and capacity building together with all stakeholders involved.

Key indicator:

Published report on the fulfillment of obligations of the "Ostrava Declaration".

3.2.4 Planning and implementing of environmental epidemiological studies to assess environmental risk factors impact on human health

To protect the Georgian population from harmful exposure to the environment and prevent diseases associated with the environment, it is a priority to conduct comprehensive, environmental, epidemiological studies, especially with regard to the latest achievements.

Planned activities:

- Planning and implementing of environmental epidemiological studies within the support of the field epidemiology program or other financial resources;
- Assessment of risk factors of the professional environment on workers' health;
- Evaluation of exposure to lead based on screening data in children;
- Development of relevant recommendations and informing of the population to reduce and prevent a harmful impact of the environment.

Key indicator:

Published report on comprehensive epidemiological studies in accordance with the priorities.

3.3 Major Risks and Challenges

- Financial risk, due to the scarce funding for diseases, associated with environmental risk factors;
- Inadequate and unsystematic monitoring and control measures regarding the qualitative status of the environmental in the country;
- Lack of a coordinated, consistent state policy in the environment and health area;
- Ignoring environmental health issues in policy documents;
- Lack of experience, adequate technology and financial resources;
- Non-existence of information gathering and analysis systems for the internationally recognized indicators;
- Currently active regulatory acts on air and water quality in Georgia as well as the existing monitoring system do not manage to assess pollution of the environment and its impact on population health in accordance with WHO's recommended parameters;
- Disregard of the introduction of modern methodological approaches in a timely manner;
- Absence of any possibility to equip NCDC with appropriate equipment and test systems to evaluate environmental hazard risk factors and to identify environmental impact.

4. Public Health Emergencies

Strategic Priority: Strengthen preparedness capacities for rapid and effective response to public health threats

4.1 Overview of Current Situation

In the 21st century, a number of problems emerged causing a threat to public health (natural disasters, epidemics, manmade disasters etc.). Over the past 10 years, epidemics have created problems for the whole world. Therefore, public health emergency preparedness and response is one of the most important strategic components, strengthening of which fosters not only the country's security but also global security.

Public health preparedness and response is also one of the most important directions for Georgia. Since 2016 the Public Health Emergency Preparedness and Response Division has been functioning at NCDC aiming to monitor public health threats at national and international levels, enhance preparedness and response capabilities, implement international regulations and initiatives, in order to respond efficiently during emergencies, which will result in harm reduction or its prevention. To improve the existing system, it is necessary to work closely with organizations and structural units within and outside of the country.

4.2 Strategic Objectives

4.2.1 Elaboration of a public health emergency preparedness program

The Unified Public Health Emergency Management Program involves all units of NCDC. The establishment of the system implies systemic and structural changes that will be aimed at proper response and management of the public health emergencies.

Planned Activities:

- Establish a coordination group for the elaboration of the Unified Public Health Emergency Management Program, which will bring together specialists of NCDC and representatives of the steering team to determine the strategic directions and priority areas of the program as well as identify ways to implement the system;
- Prepare relevant documents that will contribute to the formation and functioning of a Unified Public Health Emergency Management System.

Key Indicator:

Developed and approved NCDC Public Health Emergency Management Program.

4.2.2 Establishment of a Public Health Emergency Operation Center (PHEOC)

PHEOC is responsible for responding to small-scale and/or large-scale emergencies that pose a threat to public health. The center is the core structure for coordination and information exchange, which is in charge of mobilization of efforts and unified management, aimed at potential and existing threats

Planned activities:

- Develop a unified emergency response plan that will facilitate proper and rapid response;
- Establish and technically equip PHEOC, which will facilitate monitoring and coordinating a response, if necessary.
- To train public health specialists.

Key indicator:

Technically equipped and established PHEOC.

4.2.3 Ensure implementation of the International Health Regulations (IHR 2005) and the Global Health Security Agenda (GHSA)

Planned activities:

- Raise awareness of other sectors about IHR;
- Maintain / strengthen the core capacities of the IHR;
- Set up the secretariat of the Real-Time Surveillance Action Package for the GHSA;
- Support the implementation of activities under the Action Packages of the GHSA;
- Develop an action plan for the country to implement IHR.

Key indicator:

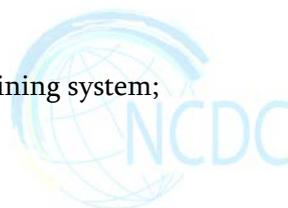
Improved rates of the annual IHR assessment and Joint External Evaluation (JEE).

4.2.4. Conduct trainings and simulation exercises

One of the important aspects of preparedness and response to public health risks is the availability of trained staff in the center, who will be well aware of the public risks and the basic principles of responding to them. It is also mandatory to train the staff on specific aspects of preparedness and response, who will be actively involved in all levels of preparedness and response activities.

Planned activities:

- Establish training system;
- Develop the materials for the training system;
- Train trainers;
- Conduct simulation exercises.



Key indicators:

Number of conducted trainings and exercises (3 exercises during 5 years).

4.2.5. Cooperation with international partners

The Division of Public Health Emergency Preparedness and Response cooperates with international organizations, whose goals meet the strategic directions of this Division. eg: Within the framework of the GHSA, communication network with partner organizations and leading countries of the initiative expands and strengthens through teleconferences, ministerials and within the meetings of Action Packages. It is also essential to maintain sustainable communication with WHO in the frames of IHR.

4.3 Major Risks and Challenges

- Low awareness of other bodies on the commitment to implement IHR, except health care;
- Absence of communication mechanisms with other sectors;
- Lack of funds to equip the PHEOC.

5. Scientific Activity

Strategic Priority: Develop applied and fundamental biomedical and biotechnological scientific research potential

5.1 Overview of Current Situation

Scientific activity is one of the important priorities of the NCDC, which includes applied and fundamental biomedical, healthcare services, medical technologies, epidemiological and public health researches. Studies cover health care policy, performance improvement, development of professional medical activities and/or treatment and prevention capacities at individual, community and population levels. It is worth mentioning that in recent years the growing number of joint researches with the international and local partners and developed multidisciplinary cooperation is the basis for sustainability in this direction. It is important that molecular epidemiology acknowledged at the international level, which based on specific genetic markers/genetic profile of the infectious agent, allows us to determine the etiology of the disease at the molecular level, track the transmission path and spread of infectious agents, characterize the pathogen's dissemination in the country/region and in the population, etc. Meanwhile, human genetic factors play a major role in the development of various diseases. Some changes in human genes are the cause of increased risk of developing certain diseases and proper response to the medicinal treatment. New approaches have been developed in recent years, such as personalized medicine (PM). The concept of PM is individually tailored treatment based on a person's genes and aims to prevent and treat according to the human genetic profile. Discovering the exact genetic profile will give the possibility to study genes causing asthma, diabetes, hypertension, cancer and other diseases. Of no less importance is the development of applied researches. Over the years, many researches were developed using different methodologies - population survey, sentinel surveillance, screening, etc.

5.2 Strategic Objectives

5.2.1 Development of scientific potential, including the implementation of modern technologies in PM

Within the scope of the activities of the NCDC, in order to optimize scientific performance and existing potential, the following activities are planned to be performed:

- Support the scientific projects development and funding:
 - Attract new generation scientist and give them incentives by creating a favorable environment for research and scientific work, developing skills and research capacity for competitive grant-writing and fund-raising at an international level, promote them to be grant-managers and principle investigators;
 - Popularization of applied, fundamental and biotechnological researches performed at the NCDC and support the development of independent scientific research groups (which will be focused on different scientific directions);
 - Ensure full access of NCDC staff to scientific articles (digital forms) published in international journals through attracting the funds needed to open access;
 - Optimal planning of workload and keeping the equilibrium between the research and daily activities in order to ensure that all employees are rationally engaged in their work

- according to personal qualification and research interests and get adequate financial support;
- Encourage and increase motivation of employees (as with tangible as well as intangible means) in development of a new scientific idea, project proposal or cooperation.
 - Facilitate scientific activities, quality and innovative researches:
 - Attract scientists and researchers at international level for collaboration and developing/implementing joint research projects. Moreover, support the Master and Doctoral programs by offering NCDC facilities to perform studies;
 - Support the promotion and implementation of national and international projects for internships and mobility for staff, students and young scientists;
 - Ensure access to current research processes and developed intellectual capital for the public (both local and international levels);
 - Ensure development and publication of articles with the NCDC contribution in the international high IF ranked journals;
 - Arrange thematic discussions, seminars, public lectures with participation of stakeholders; Regularly conduct lectures/seminars for students; Renew the weekly "Journal Club", with the presentations of authors, accepted for publication and ensure the after-presentation question-answer mode;
 - Enhance partnership of the Genome Center with universities and research institutions within and outside the country. Invite scientists and experts from the leading US and EU genome centers for presenting lectures and seminars for local scientists and students.
 - Provide a permanent connection with Georgian scientists working abroad and develop cooperation:
 - Continue to seek Georgian scientists working abroad. Update contact / information database;
 - Invite Georgian scholars working abroad to get acquainted with the NCDC capacities and discuss perspectives of future cooperation;
 - Organize on-place and online workshops including Georgian local scientists with international partners;
 - Foster the favorable environment for Georgian scientists working abroad to come back and continue their research activities at NCDC.

Key indicators:

- Increased the number of new scientific projects by 1/3 with participation of young, foreign and Georgian scientists, working abroad;
- Increased the number of published papers in the international, referring, high ranked (IF \geq 1.8) journals;
- At least 4 times conducted target discussions, seminars, public lectures on ongoing/Research
- Updated "Journal Club" and at least 6 regular meetings per year.

5.2.2 Building of the NCDC's material-technical capacities

The objective aims to promote the modern and latest material-technical capabilities and support, for which the following *activities are planned*:

- To have permanent contact with the representatives of the up-to-date research equipment companies to ensure uninterrupted access to innovations;
- To conduct training for the NCDC staff for facilitating development of new material-technical capabilities;
- To find available sources of financing capacity for the building of the Genome Center in order to be able to purchase and install a new generation of additional (Illumina, IonTorrent, PacBio) sequencing or other kind of required equipment and their application in practice.

Key indicator:

Installed new material-technical equipment and conducted trainings for staff.

5.2.3 Capacity building of the Genome Center and ensuring function of Vivarium in compliance with the international standards

Planned activities:

- Develop the informatics area, search for new (commercial and free of charge) programs for data processing and implementing in the center;
- Study international standards and their adaptation to the Vivarium work;
- Develop/expand commercial services/activities.

Key indicators:

- ISO certificate obtained by the Genome Center;
- Launch of vivarium and obtain international certificate.

5.2.4 Popularization and internationalization of scientific activities

The work in this direction not only promotes science popularization but also facilitates the NCDC's scientific activities and expands international cooperation.

Planned activities:

- Present results of ongoing and completed research projects via scientific and popular channels at local and international levels (conferences, seminars, media channels, social networks, NCDS's web page, etc.);
- Disseminate study results among professional associations (relevant training, meetings, conferences);
- Seek new international partners and engage in the NCDC activities.

Key indicators:

- Published brochure about the NCDC's scientific activities in both Georgian and English languages, where the ongoing and completed scientific projects of the last 5 years are collected;
- Increased dynamics of presentations and reports from the NCDC staff from the various scientific conferences.

5.3 Major Risks and Challenges

- Lack of the retention mechanisms for qualified, skilled staff;
- High value of installing new material-technical equipment and human resources training;
- High competition for obtaining funding of scientific research;
- Low motivation among young people to pursue scientific activities.

6. Health Information System

Strategic Priority: Develop Electronic Information Systems

6.1 Overview of Current Situation

Special attention of the NCDC was aimed at the development of information systems. Since 2011, the foundation was laid for the establishment of the integrated health information system throughout the country for both hospitals and primary health care institutions, a cancer population registry and “Pregnant women and newborn health surveillance electronic module” (GBR) so called “Birth registry” have been introduced; electronic modules of immunization, logistics and laboratory management have been developed; birth and death registration modules and other information systems were transferred under the administration of the NCDC. In order to improve the quality of the information, the systems are being updated on a regular basis: updating of the systems, adding validation and analytical tools, that facilitate their use for the proper policy development. Measurement of indicators for the utilization and efficiency of the population health status and health care services according to age, sex and geographical area is being carried out on a regular basis.

The quality of data is the main challenge of the development of electronic information systems. The quality refers to the involvement of medical institutions in the reporting, accuracy of data, and timeliness of the reporting. Transfer of paper-based forms into an electronic format, creation of thematic registries, and full digitalization of reporting is an essential component of the system development. Mobilization of appropriate human and financial resources is an unconditional basis for the use of the modern information technology. One of the most significant challenges for the development of the entire system is upgrading of technical facilities (including software), introduction and further support of modern technologies.

The challenges as follows still remain: Improvement of immunization electronic system and increase of its notability and efficiency; Introduction of the logistical module and Laboratory Information Management System; Creation chemical substances registry and setting up a one-window for registration of disinfections.

6.2 Strategic Objectives

6.2.1 Development of thematic registries and systems

Planned activities:

- Improvement of the quality of data;
- Full digitalization of the statistical reports and cross-sectional analysis production;
- Development and implementation of new thematic registries (Cancer Registry, HIV/AIDS Prevention System, etc.);
- Participation in the improvement of the quality of death data;
- Development and publishing of different publications;
- Modification of the immunization module, achieving of its full functionality, increasing the analytical features;
- Development of the registry of chemical substances and setting up a “one-window” for the registration of disinfectants;
- Development of a registry of medical personnel;

- Development of an analytical engine for Hepatitis C;
- Implementation of the logistical module countrywide;
- Administration of the blood donors' unique database;
- Introduction of the Laboratory Information Management System, effective management of the Lab network using the system, development of the real time monitoring tool;
- Updating the EIDSS.

Key indicators:

- Digitalized all statistical reportings;
- Developed universal cancer management system;
- Number of active thematic registries;
- Share of ill-defined cases of death $\leq 20\%$;
- Number of developed publications;
- Coverage rate of customers with immunization module;
- Developed registry of chemical substances;
- Medical personnel registry developed with the State Regulation Agency for Medical Activities.

6.2.2. Development of the digital mobile platform

Planned activities:

- Citizens' awareness raising and more involvement in e-Health;
- Creation of various mobile applications for the population to increase their awareness and efficiency;
- Improvement of customers' skills through regular trainings;
- Development of distance learning capacities;
- Implementation of the Intranet Function capabilities;
- Scaling up the ECHO project in the country.

Key indicators:

- Simplified possibility for the citizens of Georgia for the online verification of their own and their children's immune status;
- Various short text messages delivered by the NCDC to the population and provision of the population through applications with advice on public health activities;
- Provision of access to various interesting information for medical personnel through online training courses and communication with patients using online platforms.

6.3 Major Risks and Challenges

- Setting up of a relevant structural unit that will be fully responsible for the development of electronic systems;
- Creation of human resources on the NCDC basis of the center, recruiting of the staff and developing of the constant rotation cycle;
- Lack of financial and human resources.

7. Public Health Care Management

Strategic priority: Promote development of public health care system management

7.1 Overview of Current Situation

Challenges to the management of the public health care system are multi-sectoral and complex. MoIDPOTLHSA, its subordinated institutions and local authorities provide management and coordination within certain competencies. The leading role in operational and methodological management places the NCDC, which within the state programs, coordinates 60 municipal public health units through 9 regional services equipped with modern laboratories. The main challenge faced by the system is improvement of united activities of hierarchical accountability to the central and municipal structures aimed at implementation of essential public health functions. Despite recent achievements, municipal public health units still cannot ensure effective implementation of EPHOs 1-5 due to poor legislation, organization and improper technical capabilities. Despite the additional source to the basic funding from the state budget (they are receiving reimbursement for implementation of requirements of “Epidemiological Surveillance Program”) available financial resources are still scarce. Against the background of current regulations, the legal relationship with other sectors of the health care system is still unclear. Despite the national recommendations and other methodological guidelines on the functioning format, the performance level is not satisfactory.

The NCDC works intensively on improvement of communications with municipal units and modernization of program agreements, organizes meetings, provides monitoring on implementation of state programs on sites, as well as the process of training and re-training of the local workforce.

One of the challenges of the national health care system oriented on preventive activities is improved management of the municipal public health care system, which ensures their integration in the solution of priority tasks and facilitates the process of maintenance / improvement of the population health.

7.2 Strategic Objectives

7.2.1 Supporting the establishment of modern structure, sustainability and effective management of the system

Taking into consideration the current situation, promotion of establishment of modern structure, sustainability and effective management of public health care system is one of the target areas of MoIDPOTLHSA and NCDC.

Planned activities:

- Supporting clear synchronization of the functions of state and local self-government public health bodies;
- In accordance with the unified objective and strategy of the health care system, exact identification of functions, rights and responsibilities of regional divisions of NCDC, legitimisation of coordinating and management activities in relation to local self-government authorities and municipal structures through development of appropriate regulations;

- Supporting the development of legal bases to achieve 1.5 to 2 fold increase of state and local public health budget expenditures on disease prevention;
- Regarding municipal public health care units:
 - Promote development and implementation of a legal mechanism for staff motivation and promotion;
 - Develop programs for recruiting and retention of qualified specialists, support creation of local specialists reserves;
 - Increase episurveillance and coordinating role in terms of implementation of preventive activities;
 - Initiate the development of an updated version of identification of minimum competencies of employees.

Key indicator:

Facilitate organization of intensive dialogue, workshops and joint discussions with central and local self-government authorities on improvement of functioning of municipal public health care units, their structure, financial and human resources staffing.

7.2.2. Provision of the population with timely and comprehensive information on health risks and preventive interventions, implementation of modern methods of feedback

Implementation of the *following activities* aimed at delivery of timely, accurate and reliable information to target groups with the use of advanced technologies:

- Facilitate implementation of new information/communication technologies for ensuring timely delivery of relevant information and maximizing population coverage;
- Provide regular and close contacts with media in the implementation of informational and educational activities aimed at promotion of a healthy lifestyle, and overcoming harmful habits and stigma, etc.
- Set the feedback system with target population (perform studies and surveys on topical issues of health maintenance and improvement and consideration of obtained results in practical work).

Key indicators:

- Improved communication in terms of information delivery, as well as feedback;
- Raised level of population satisfaction.

7.2.3 Promotion of scientific activities in the public health structures

The following activities are planned for strengthening and support of *scientific activities* in the public health structures:

- Development of the system for elaboration of scientific projects and minor collaborative programs at regional level with active involvement of municipal services;
- Introduction of the practice of organizing scientific conferences, workshops, and seminars in regions with participation of representatives of local authorities aimed at sharing advanced practices and strengthening laboratory services of the NCDC;
- Coverage of scientific activities of the NCDC by mass media for ensuring popularization and attraction of potential stakeholders.

Key indicator:

Increased involvement of the municipal public health workforce in the application of modern

technologies and on different phases of implementation of scientific projects.

7.2.4 Facilitate improvement of the legislative basis for the functioning of public health care units

Ensuring consideration and adaptation of public health systems and regulations of advanced countries by dialogue with legislative and executive structures aiming at fostering complete fulfilment of EPHOs 10, improvement of the management of the processes and legislation and to get closer to the EU model.

Planned activities:

Participation of NCDC and its structures in the improvement of public health care system management in collaboration with municipal governing bodies and based on the international experience. Improvement of the system of joint monitoring and evaluation.

Key indicator:

Meeting with local authorities and municipal units, initiated by the NCDC for presentation of the EU model and discussion on EPHOs 10.

7.2.5 Development and strengthening of public health laboratory network

Development, strengthening and expansion of laboratory network is important for ensuring facilitation of operational and targeted treatment of patients, environmental health and preventive activities within the framework of unified healthcare.

In addition, improvement of the quality of laboratory testing represents one of the major challenges of the country's healthcare system. The main factor of these challenges is the lack of efficient mechanisms for quality control, the introduction of which requires the development of national external quality assessment programs (EQA), allocation of adequate resources and facilitation of professional testing programs. To overcome these challenges the strengthening and modernization of public health laboratory capacities are crucial.

To this end, it is important to strengthen the role of the Lugar Center as a public health reference laboratory and to introduce modern, high-tech testing at its base for the purpose of external quality assessment (professional testing) programs.

Planned activities:

- Systematic upgrading of employees' qualification in biosafety/biosecurity for increasing their motivation for participation in scientific researches, facilitation and promotion of involvement in international projects.
- Updating personnel job descriptions, maintaining of re-certification process.
- Preparation for accreditation of bacteriological/serological laboratories in accordance with international laboratory standards ISO 15189 and introduction of external and internal quality control.
- Upgrade, develop, approve, and implement material-technical base and other relevant documentation (SOPs, forms, different working documents) of laboratories.

- Organization and implementation of researches on resistance to bacterial antibiotics within the Association Agreement between the EU and Georgia and its action plan.
- Expanding the range of agents that belong to clinical bacteriology area, organization and implementation of researches on whooping cough, campylobacter, anaerobes, fungi, viral (measles, rubella), parasitic and other pathogens.
- Ensuring preparedness of laboratory network for emergency situations and prompt response.
- Attract new contractors by offering high-tech, high quality and financially interesting microbiological researches in a competing environment with similar profile laboratories.
- Development of the external quality control programs and provision of their financial and logistical support.
- Identifying target pathogens for EQA program depending on the priorities for public health and transfusiology laboratory services.
- Introduction of modern technologies, such as nucleic acid testing for confirmation of bloodborne infections (HIV, HCV, HBV), including piloting of centralized testing of blood donations and its further maintenance.
- Ensuring participation of public health and transfusiology laboratories in the EQA programmes.

Key indicators:

- Improved microbiological and virological research capabilities at laboratories, introduced nucleic acid testing methodology.
- Above mentioned laboratories meet the good laboratory practice standards.
- Improved theoretical knowledge and practical skills of employees through regular trainings and re-trainings.
- Introduced the external quality control schemes at public health and transfusiology laboratories in order to improve testing quality, reliability and timeliness.
- Equipment and reagent validation is carried out in accordance to the plan established in the public health and transfusiology laboratories.
- Increased commercial income of public health laboratories as well as number of contractor organizations and laboratory-based researches.

7.3 Major Risks and Challenges

- Gaps in management and coordination of municipal public health care units;
- Lack of or inadequate financing of municipal programs based on local needs;
- Insufficient support for program activities by local authorities, their inadequate competencies towards public health care problems;
- Irregular update of office, material and technical resources, vehicle fleet and non-optimal staff schedules of local services.

- Deficiency of qualified personnel, difficulty in recruiting/retention due to low motivation, absence of reserves;
- Lack of possibilities for continuous professional development for local human resources, low interest of local authorities in improvement of workforce potential;
- Low rate of development of hygienic norms, standards and guidelines in public health and their harmonization with the EU standards;
- Low coordinating role of public health specialists in the solution of local health problems;
- Low level of integration of preventive measures of public health programs into primary, universal and private insurance packages and plans;
- Insufficient interactions and accountability of regional structures and municipal public health centers;
- Low intensity of implementation of central programs, especially new sub-components of Health Promotion Program at local levels;
- Lack of plans for the management of extraordinary situations, and responses of public health on emergency cases, poor cooperation between different units on the phases of incident reduction, response and recovery. Unsatisfactory condition of preparedness to emergencies and potential disasters.



IV. Partnership

1.1 Overview of Current Situation

One of the significant and integrated directions of the National Center for Disease Control and Public Health is collaboration with local and international institutions. The accomplishments achieved through implementation of the NCDC priorities and objectives on an appropriate level are due to this collaboration.

The support and technical assistance from donor and partner organizations during the decades made Georgia a leading country in the region with its strong epidemiological and laboratory surveillance capacity, diagnostic and reporting systems, academic scientific potential and qualified human resources.

In development and formation of the NCDC the international organizations played a special role starting from the early 90's of the previous century which is being expanding up to date.

1.2 International Partners

Along with a number of international collaborators the WHO takes first place as a main partner organization of the NCDC. The collaboration includes sharing of technical expertise and assistance in almost all directions the NCDC is implementing within the scope of its mission: Surveillance of communicable and non-communicable diseases; Immunization; Environment Health, Medical Statistics; Maternal and Child Health; Reproductive Health; IHR; AMR, Strengthening of Tobacco Control, *etc.*

The main objective of the WHO in Georgia is to assist the Government of Georgia in the elaboration of a national health policy to enhance the healthcare system in the country; to promote development and strengthening of Emergency Preparedness; to support the establishment of educational standards in the health sector and to provide trainings as well as to provide evidence-based technical expertise and information to the health sector in compliance with WHO basic goals.

Collaboration will further continue in the following directions:

- Communicable diseases: Hepatitis, TB, VPD, AMR;
- Non-communicable diseases: NCDs surveillance, prevention and control; Strengthening of Tobacco Control (in cooperation with secretariat of the Tobacco Control Framework Convention);
- Reproductive Health, Maternal, Neonatal and Child Health, Environmental Health;
- Enhancement of Health Information Systems and development of Evidence-based Medicine'

In terms of development of epidemiological and laboratory surveillance capacity, timely detection and response of applied bio-medical and bio-technological scientific potential the NCDC has been collaborating with U.S. donor and partner organizations such as: CDC, DTRA and WRAIR.

Collaboration will further continue in the following directions:

- To create a new cooperation tool - establish an inter-sectoral Board of Governors between the Georgian and U.S. Government agencies which will strengthen partnership relations between the countries and will act for the Georgian agencies' needs and priorities (including the NCDC needs and priorities) and will be based on a Memorandum of Cooperation;

- To expand Science Diplomacy;
- To fund the research projects; to implement joint studies.
- To promote further development and capacity of the Lugar Center.
- To expand cross-border collaboration under the “One Health” principle; to establish an Emergency Operations Center.
- To provide human resources with new methodological trainings.
- To develop information technologies.

The Global Fund to Fight AIDS, Tuberculosis and Malaria represents one of the largest and most important international donors for the NCDC. Close partnership relations with this organization were established from 2013, when NCDC became a major recipient of grants for HIV/AIDS, tuberculosis and malaria. Since 2014 NCDC has been implementing two programs of the Global Fund related to Tuberculosis and HIV. Modern international approaches and implementation of strategies, access to medicines, preventive interventions and rapid diagnostic methods available through this support have significantly reduced the burden of morbidity and improved statistical data.

The Hepatitis C elimination program has become a new driving force for detection of HIV, hepatitis C and tuberculosis cases. With the support of the Global Fund, the country launched an innovative pilot program in the Samegrelo-Zemo Svaneti region, incorporating the integration of HIV, TB and hepatitis C screening services (detection and management) under one umbrella at primary healthcare (outpatient centers and family doctors) level.

The Global Fund’s Tuberculosis Program launched "Zero TB Initiative" in the Adjara Region. The purpose of this initiative is to create "Islands of Elimination" in line with the "End TB Strategy" targets promoting overall reduction of TB cases.

Currently Georgia is in a transition period from Global Fund support to domestic funding. The transition and sustainability plan 2017-2019 was developed reflecting short and medium term challenges of transition.

Collaboration will further continue in the following directions:

- It is planned that the Global Fund reduces funding (50%) for the next period, therefore the Government of Georgia should mobilize internal financial resources in the health sector to cover the growing programmatic needs for improving disease management.
- In the next two years, the state will gradually take over the responsibility for procurement of diagnostic test systems and high quality drugs.
- Based on the estimates laid down in the standards, the Government will make decision on financing the HIV prevention program components.
- Implementation of the transition plan depends significantly on international technical assistance mobilized by the country. In this regard, the assistance of WHO and other partners is essential for the development of relevant strategic documents and for the introduction of innovative interventions proposed by the international technical advisory team.

The NCDC collaborates with Norwegian leading institutions, including the NIPH with its

subordinate offices in Global Health: HQs on Cancer Registry (Oslo) and Birth Registry (Bergen). Moreover, it is implementing a joint project GeNoC-PH with the North Arctic University UiT. The goal of the project is to improve public health competences and experience, share experience with regard to population registries and especially with birth registry functional quality, to conduct epidemiological and descriptive studies in the perinatal field in Georgia by using PhD students' scientific works; to expand international partnership relations in terms of Global Health.

The NCDC collaborates with European and American leading universities (Universities of Florida, Maryland, Emory, Johns Hopkins, North Arizona, Oslo, as well as Northern Arctic University UiT, Cardiff University). Since 2014 the NCDC is a member of IANPHI. In the framework of a biological safety program is an intense partnership relationship with the Bundeswehr Microbiology institute. The NCDC has partner collaboration with NIH, IHME, PHE, ECDC, The Mediterranean and Black Sea Regional Intervention Epidemiological Training Program - MediPIET; MediLabSecure. On the basis of the Center the EU Twinning Project "Institutional Strengthening of the Environmental Health System in Georgia" is being implemented. In terms of environment health the NCDC cooperates with Istituto Superiore di Sanita of Italy. From a scientific potential perspective the Center has long-term partnership relations with ISTC and STCU. The following institutions are supporting the NCDC in tobacco control: Bloomberg Philanthropy Foundation - World Lung and Tuberculosis International Alliance (Enforcement of 100% smoke-free policy in healthcare institutions and secondary schools of Georgia" and "Building a Supportive Environment for the Enforcement of Effective Tobacco Control Tax and Price Measures in Georgia"). The project is currently being implemented in accordance with WHO FCTC requirements for approval and enforcement of legislative amendments designed to reduce demand for tobacco in Georgia. In 2015 EMCDDA supported and co-funded for the first time alcohol, tobacco and other drug use survey which is re-planned (ESPAD) in 2019.

In terms of technical assistance the NCDC cooperates with almost all UN and EU acting organizations in Georgia: UNFPA, UNICEF, UNDP, USAID, FAO, GAVI, WB.

It is also notable that it runs cooperation with leading pharmaceutical companies: Novartis Biotech, Abbott Diagnostics, Cepheid, FIND, other private labs and clinics. These collaborations covers scientific as well as public health important directions.

1.3 Local Partners

The NCDC is in partnership with local universities and research institutions: Tbilisi State Medical University, I. Javakhishvili Tbilisi State University, Ilia State University, The University of Georgia, Free University, Agrarian University of Georgia, Akaki Tsereteli University, Batumi Shota Rustaveli University, Ivane Beritashvili Center of Experimental Biomedicine, Giorgi Eliava Institute of Bacteriophage, Microbiology and Virology, Scientific-Practical Center for Infectious Diseases, AIDS and Clinical Immunology, National Center for Tuberculosis and Lung Diseases, Center for Mental Health and Drug Prevention, National Statistics Office, Agriculture Research Center and Tbilisi Zoological Park. The Center also cooperates with the Georgian Harm Reduction Network.

Under "One Health" principles the NCDC collaborates with the Ministry of Environment Protection and Agriculture and its laboratory as well as with the National Food Agency.

The NCDC long-term partnership relations are very significant and productive in the history of the Healthcare System of Georgia. The Center plans to further expand its collaboration with various world relative institutions using applied scientific and public health researches, creating innovative products, introducing new methodologies and developing human resources.

During the next 5 years the NCDC plans to contribute to strengthening the health educational components in terms of integration into the BA, MA and PhD programs on the basis of permanent cooperation with universities (in the context of providing a material-technical basis for education, on the one hand and on the other, sharing the best practice from the foreign partners). In addition, during the following 5 years the NCDC, within its competence, will contribute to the introduction of short-term learning courses for public health specialists focusing on continuing professional development (considering face-to-face communication and distance learning).



V. Sustainability and Financial Maintenance

The NCDC sustainability is one of the main prerequisites of success for achieving the goals set in the strategy, which ensures working on priorities without any obstacles. Social, economic and internal factors contribute to the sustainability maintenance.

From social factors, partners' support of the NCDC is important. For the sustainable achievement of the goals outlined in the strategy, the NCDC will continue to actively pursue cooperation at the national and international levels (including multisectoral). The NCDC will also participate in the projects that will raise its notability at the international level and will be focused on acquiring new knowledge and experience in order to ensure continuous support of capacity building of the staff and permanent development of its human resources.

The economic factor is the basis for sustainability. Financial support will have special consideration while implementing the strategy. While elaborating the budget for the NCDC, there will be active communication and consultation with the Multisectoral Supervisory Board, local and international partners, to cover all priority directions. Moreover, an optimal balance to be kept between revenue and expenditures, and development/implementation of actives to be based on principle of cost-effectiveness.

Implementation of the measures defined by the strategy is mainly determined by allocation of the state budget. Due to increasing the NCDC's functions, dynamic growth of the budget is characterized over the recent years. The NCDC's financial expenditure's controlling mechanism makes for the action plan to be optimally implemented. Additionally, the NCDC will use revenue from its commercial activities, and from part of the grant projects from donor organizations. The amount of financial resources required for the implementation of the strategy is determined by annually updated a mid-term plan of expenditures.

During the strategy implementing process, the third (internal) factor will be oriented on continuous quality control and improvement. It is worth noting, that the NCDC Quality Control unit is responsible for introducing a laboratory quality management system, promotion and continuous improvement. With the NCDC leadership, Lugar's Center's General Microbiology and Serology Laboratories were successfully accredited with ISO 15189, and they were granted an ANAB/ANSI's certificate. Strengthening of internal and external mechanisms to maintain existing quality and ensuring continues quality improvement is of the utmost important for the NCDC's sustainability.

VI. Civic Engagement and Transparency

Effective implementation of the strategy includes active engagement of the society, civic groups and strategic partners and raising awareness on public health, through continuous communication, informing and carrying out educational activities.

For the civic engagement and raising confidence, for dialogue and further cooperation, it is necessary to provide accurate, comprehensive, reliable, updated, adequate, transparent, non-discriminating and timely information and recommendations. The NCDC is aware of the needs and expectations of different groups, therefore, is ready to provide adequate, high-grade and effective

products, expert assistance and delivery services to enable the implementation of the strategy. Strengthening of the NCDC image and confidence about offered services by the Center is one of the targets for the full implementation of the priority activities. For this purpose, the NCDC will use modern, mostly accessible and perceivable communication tools (web-page, TV and print media, social networks, messages, informative booklets, flyers, campaigns, trainings and seminar weeks, events dedicated to special days, conferences, involving notable persons and popular faces to deliver information to certain groups). In addition, the relevant structural units will work with groups of special needs (for high mountains residents and development of special information channels for ethnic minorities with involvement of Public Health Municipal Centers, providing persons with disabilities with inclusive information/educational programs, etc.) to expand the communication network.



Supplement 1: SWOT analysis

<p style="text-align: center;">Strength</p> <ul style="list-style-type: none"> • Successful and long-term experience of working in the public health direction • Highly qualified and motivated staff • Increasing investments for epidemiological surveillance • Real Time Electronic Integrated Disease Surveillance System (EIDSS) • Continuous supply of vaccines • BSL3 level referral laboratory with Genome Center and increased access to laboratory tests • Population registries and experience of working with them • Updated electronic bases • Scientific and international grants and management experience • Existing strong international cooperation, stable partners and their support • Simplified administrative procedures, transparency and developed services • Effective and rapid connection between the NCDC and municipalities • Modern material and technical basis 	<p style="text-align: center;">Weakness</p> <ul style="list-style-type: none"> • Irrelevant level of preventive measures, financial limit and lack of trust from the population on preventive services • Lack of Lifelong Learning possibilities and professional development system • Insufficient public-private cooperation • Fragmentation of information systems • Insufficient financial resources for the implementation of the innovations and new technologies and associated staff training • Non-rational usage of human resources
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Commitment of the state government to promote and improve public health • Political support • Increasing tendency of multisectoral cooperation • Existing universal health care program in the country • Existing strategic plans for priority spheres • Existing technological progress • Georgian specialists' involvement in the local labor market who are educated at the international level and working abroad against the background of globalization • NCDC's high notability and credibility at local and international levels 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Change of economic factors (inflation, decline of GEL value, economic crisis and impediment of development) • Variable political situation in the region • Gradual reduction / completion of donor funded programs and gradual handing over of their commitments by the state • Possible reduction of funding required for effective work • Replacement of old barriers with new ones on the path to fight against various diseases • Low level of acceptance by population public health interventions • Change in the age structure of population



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