



Levan Sakvarelidze National Center for Disease

Control and Public Health

SUMMARY REPORT



On Activities Performed in 2017

Tbilisi

2018

About the National Center for Disease Control and Public Health

Levan Sakvarelidze National Center for Disease Control and Public Health (NCDC) is a legal entity of public law and is designated as a leading agency for public health in the country. The NCDC is accountable to the Ministry of Labour, Health and Social Affairs of Georgia (MoLHSA) with a dedicated line in the state budget.

The Center develops national standards, guidelines, facilitates improvement of public health, provides disease surveillance, immunization program, laboratory testing, control the biosafety, implements research, ensures expert advice and responds to public health emergencies. The NCDC provides health statistics to monitor population health and guide adequate policy actions.

Mission:

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

Vision:

In line with the Center's vision "*Our Knowledge - for Public Health*", the NCDC constantly implements innovations, initiatives and new technologies oriented on public health, ensures the management efficiency and sustainable development of professional performance of human resources.

Preface

The present document is based on the extended report of the work performed for period January 01, 2017 through December 31, 2017 by L. Sakvarelidze National Center for Disease Control and Public Health. The document includes the reports on work done by the NCDC's all structural units (Communicable Diseases Department, Non-communicable Diseases Department, State Programs Department, Public Health Regional Management Department, Medical Statistics Department, R. Lugar Center for Public Health Research, Administrative Department, Financial-economic Department, Preparedness and Response to Public Health Risks Division, International Relations Division, Quality Control Division, Global Fund for HIV/AIDS and TB Program Management Unit) in line with the main strategic priorities of the Center for 2013-2017:

Priority I - Decrease of morbidity, disability and mortality caused by communicable Diseases;

Priority II - Decrease of morbidity, disability and mortality caused by Non-Communicable Diseases;

Priority III - Assessment and influence of environmental hazards and behavioral risk-factors for improvement of health status of population;

Priority IV - Development of applied and fundamental bio-medical and biotechnological scientific research potential.

NCDC is guided by the declared principles and values in the course of its activity:

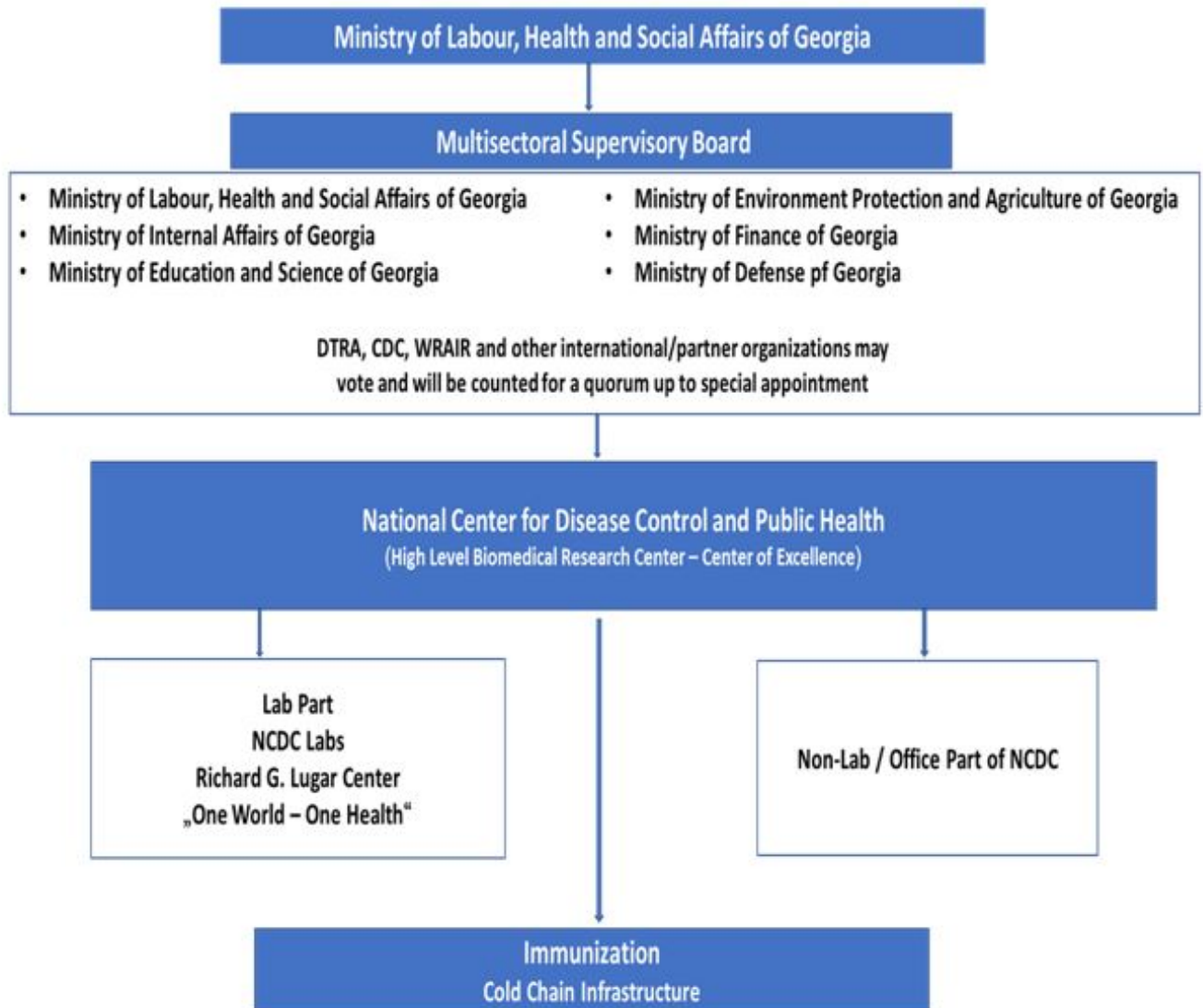
Leadership - the NCDC guides and contributes to the policy development to positively influence public health outcomes and provides leadership to ensure that the evidence is turned into practice; The NCDC is at front line to tackle and/or raise awareness about public health challenges and/or response on them.

Partnership – Cooperation and support both on local and international levels is very important for NCDC. The Center collaborates with those who share the responsibility for protecting public health, including universities and scientific centers, as well as international, donor and other partner organizations.

Accountability - the NCDC ensures that performance reporting to the public is accurate and transparent; ensures that budget allocations is well managed and aligned to public health priorities.

Commitment to excellence - the NCDC values highest quality information based on the best available evidence, builds on and develops the intellectual assets of the organization and applies in the practice high scientific research and ethical standards.

Management of the National Center for Disease Control and Public Health



Address of the Director General of the National Center for Disease Control and Public Health

Dear Friends, Colleagues and Partners,



Our Center has passed one more year of its activity directed to improvement of health of the Georgian population.

NCDC annually develops its own vision. The Center's work includes the priority areas in line with the strategic plan, in order to reduce the population burden of communicable and non-communicable diseases, to assess environmental hazards and behavioral risk factors in order to improve health status of the population and develop biomedical and biotechnological scientific research potential. In this regard, 2017 was a significant stage in NCDC work.

I would like to mention with special pride that the country retains polio and malaria free country status and has a zero rate of rabies incidence over the recent three years, the Papillomavirus vaccination was introduced and Georgia rates the first place in the region according to the antiretroviral treatment index. Even more important steps were taken on the hepatitis C elimination path. With its high indicators of detection of the infected population, as well as the high indexes of treatment coverage and cure results, Georgia represents a model country in the world. It is worth mentioning increasing of efficiency of public health measures and

international quality accreditation for Lugar Center.

One of the last year significant achievement is selection of Georgia as the only partner country in the region within the WHO Framework Convention on Tobacco Control and commencement in strengthening the environment and health system along with the EU. Our activities were distinguished in the international arena in other areas as well: For the first time the country was elected to the WHO Executive Committee; for one year Georgia will be a chair of Standing Committee of the Regional Committee for Europe; We participated in the project "Voices of the Region" as well.

The NCDC activity is based on evidence obtained by scientific research and our research will be closely linked with public health priorities in the future as well, in order to facilitate the formation of state policy and decision-making processes.

Over the year the Center has faced number of challenges but we were able to overcome them through joint work. I would like to thank each employee of the center, all members of our team, for their dedicated work and active involvement in improving our country's health care system.

We're still in your service!

With best regards,

A handwritten signature in blue ink, likely of Amiran Gamkrelidze, written over a light blue background.

**Amiran Gamkrelidze, MD, PhD, Professor
Director General**

Decrease of Morbidity, Disability and Mortality Caused by Communicable Diseases

The strategy of communicable disease management and prevention is a highly important topic for public health systems in low and middle-income countries. Historically, communicable diseases are leading cause in mortality. In spite of the fact that from the second half of the 20th century, morbidity, disability and mortality due to communicable diseases were decreased in developed countries, it is important to mention that acute communicable diseases are still the major contributor to morbidity and mortality among children and adolescent in developing countries.

The NCDC has a leading role in surveillance of communicable diseases, as well as prevention and coordination of all stakeholders involved in a response. NCDC implements programs targeting to decrease morbidity and mortality due to communicable diseases. The number of programs and state financing has had a rising tendency through years. NCDC is a leader of the Real-Time Surveillance Action Package of Global Health Security Agenda (GHSA), National Focal point for International Health Regulations (IHR) and is coordinating integrated epidemiological system in a country, which is based on One Health approach, which unites Electronic Integrated Disease Surveillance System (EIDSS) and Laboratory Information Management System (LIMS).

The most important programs in the direction of management of communicable diseases as a priority are administration of

HIV/AIDS and Tuberculosis programs funded by the Global Fund to Fight AIDS, Tuberculosis and Malaria. Therefore, by joint financing from government and Global Fund, universal coverage for diagnostics, treatment and prevention services is provided to population with HIV and tuberculosis.

Immunization

Immunization and achievement of target coverage level are among major objectives of the Center.

State Immunization Program ensures purchasing and maintenance of the vaccines, specific serums (against botulism, diphtheria, tetanus, snake venom) and consumables, creating strategic stockpiles (vaccines against yellow fever, rabies); and their distribution in compliance with cold chain requirements from the central level to the medical service providers, for routine immunization and vaccination according to epidemiological indications. In 2017, through flexible procurement mechanism uninterrupted supply of the country was ensured with vaccines and serums of planned, specific and strategic purposes. In order to reach targeted immunization coverage, activities were performed to improve informational systems and logistics and supplementary monitoring of the medical service providers was carried out on a process and proper functioning of a cold chain informational system. State program guarantees geographic and financial accessibility for all citizens of Georgia.

Key Achievements

- Vaccination of 9-years-old girls with HPV vaccine in Tbilisi, Kutaisi and autonomous republics of Achara and Abkhazia
- Elaboration of National Immunization Communication Strategy for 2018-2021 and HPV Vaccine Introduction Communication Strategic Action Plan
- Updated/developed Immunization Management Module, countrywide electronic Blood Donors Database and Hepatitis C Electronic Screening Module (e-registries)
- Zero reporting of the human rabies cases maintained, ensured by the uninterrupted supply of rabies vaccine and serum
- Introduction of hepatitis B and influenza vaccine within National Immunization Program for patients with Hepatitis C and continuation of vaccination of HIV infected patients
- Maintaining of malaria and polio free status
- Identifying new foci of Leishmaniosis and Tularemia
- Point Prevalence study on antimicrobial resistance
- Significant decrease of ratio of Rota viral diarrheas among children under 5 years
- New national recommendation on “Surveillance of measles, rubella, congenital rubella and control of outbreaks”
- 1st line HIV and tuberculosis medications (full) and 2nd line ARV medications (25%) procurement by the state funding
- Increased coverage of hepatitis C screening
- Implemented HIV/AIDS and hepatitis C tandem/testing
- 1st place in the region on ARV treatment adherence
- Implementation first in the region of PrEP
- 83% TB treatment success rate

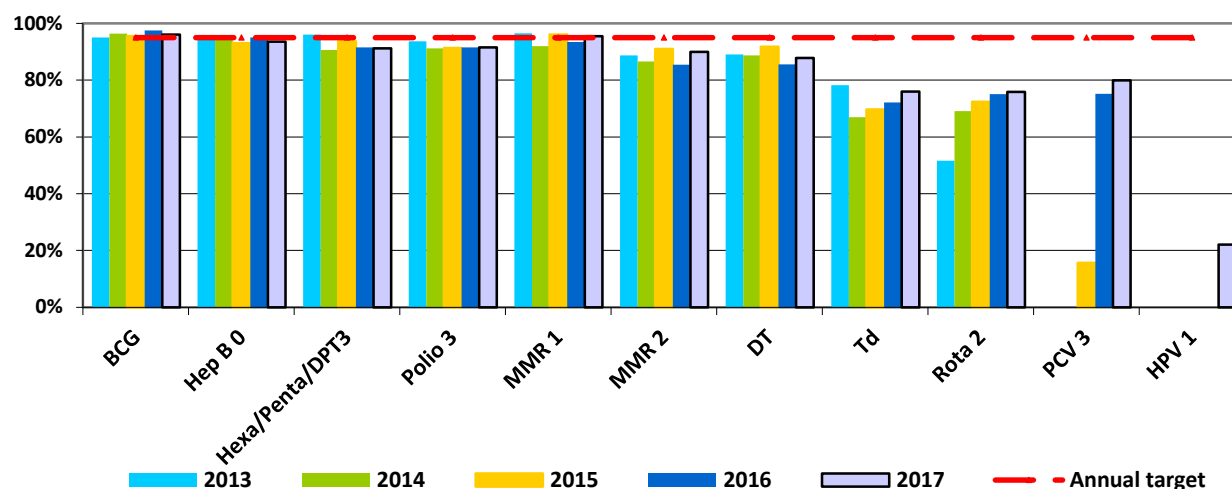
Vaccination of girls born in 2008-2009 against human Papillomavirus (HPV) started in 2017 in the frame of HPV introduction demo project for residents of Tbilisi, Kutaisi and Autonomous Republics of Achara and Abkhazia, with the MoLHSA decision and the GAVI (Global Alliance for Vaccines and Immunization) support. HPV vaccination is effective prevention mechanism of the Papillomavirus induced cervical cancer.

In order to reduce the burden of seasonal flu, 32 000 doses of seasonal influenza vaccines have been procured, which, taking into account the increasing country demand, is by 60% more than the number of vaccines purchased in the previous year. Vaccination was provided to the targeted high-risk groups of population, recommended by the Immunization Committee (including for the first time - pregnant women).

In the frame of Global Polio Eradication Strategic Plan, with WHO Europe support, seminars and trainings on adverse event following immunization AEFIs, targeting primary healthcare workers and epidemiologists have been conducted on possible complications of immunization, covering all municipalities of Georgia.

It should be emphasized that zero reporting for human rabies cases have been sustained since 2015, ensured by the uninterrupted supply of rabies vaccines and serums (immunoglobulin). Moreover, National Plan on Immunization Communication Strategy (2017-2021), HPV Vaccine Introduction Communication Plan (2017-2019) and Measles, Rubella and Congenital Rubella Syndrome Elimination National Action Plan have been developed.

Immunization coverage, Georgia 2013-2017



Immunization management electronic module was updated, new immunization application and parents page on vaccination was created, which enables to effectively manage immunization process.

Surveillance and Control of Communicable Diseases

In 2017, surveillance measures were focused on timely identification of communicable diseases, early detection and response. The efforts of

surveillance and laboratory systems were directed toward providing improved surveillance, prevention and control of especially dangerous pathogens, zoonotic, food- and water-borne diseases, sexually transmitted infections, hepatitis, tuberculosis, HIV/AIDS, nosocomial infections, influenza and influenza-like illnesses, viral diarrhea, and malaria and other parasitic diseases. The main source of funding for maintaining these events, in addition of the Global Fund and several donor projects, was a State Surveillance Program. In its frame, surveillance on nosocomial infections, study of viral diarrhea, maintenance of sustainable surveillance network on influenza, influenza-like illness and severe acute respiratory infection and response to seasonal/pandemic influenza, maintaining of population safety in malariogenic and Black Sea region on vector-borne diseases and others was carried out.

During the 2017, management of diseases under elimination was carried out continuously.

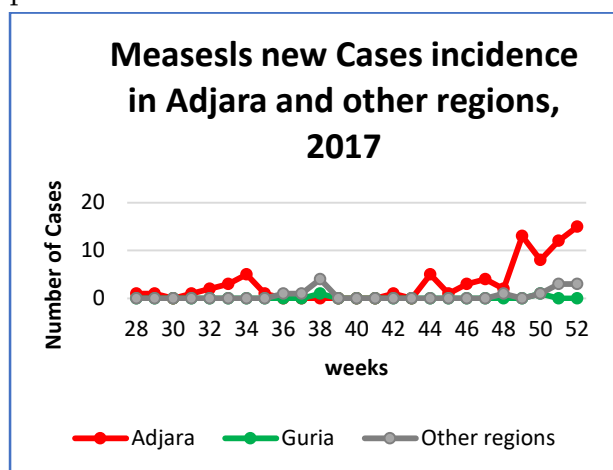
Malaria: No cases of locally transmitted (indigenous) malaria was registered in 2017, and Georgia retains the status of malaria-free country. Out of 11 possible cases imported from Asia-Africa, 8 cases were confirmed on malaria (7 of



Campaign "Don't delay, get vaccinated"

them were Georgian citizens, 1 – foreigner) and received free of charge treatment with WHO prequalified drugs.

Poliomyelitis: Since 1995, the country has been implementing special measures for eliminating wild poliovirus, and since 2002, Georgia is certified as a poliomyelitis-free country, which has been maintained throughout the reporting period.



Measles/rubella/congenital rubella syndrome (CRS): At the end of 2017, measles incidence in the country increased, with 94 registered cases. Each of them was registered and notified in a standardized manner to WHO Regional Office for Europe.

In 2017, 5 cases of rubella were registered. CRS was not identified in 2017.

Vaccine Preventable Diseases: During the year, countrywide trainings of medical personnel took place on topics as Surveillance on Measles, Rubella and CRS, Role of healthcare workers in controlling and eliminating outbreaks. National guideline “Surveillance and outbreak control of measles, rubella and congenital rubella syndrome” was approved. Upon strengthening laboratory (serological) capacity at the Richard Lugar Center in 2017, 279 cases of pertussis were

registered, which is 2,3 times more compared to previous year.

Bacterial meningitis: Surveillance on bacterial meningitis was performed with an emphasis on: *Haemophilus influenzae type B*, *Streptococcus pneumoniae* and *Neisseria meningitidis*. In 2017, surveillance was performed among hospitalized patients at Iashvili Children’s Central Hospital. Confirmation of cases was performed on CSF by latex-agglutination method, as well as bacteriological and polymerase chain reaction (PCR) methods.

Influenza and other respiratory diseases: Sentinel surveillance and diagnostic on causative agents of ILI and SARI has been continuously maintained. As a preparation for influenza season, medical personnel received training with special emphasis on influenza vaccination. Surveillance system on unusual respiratory events was implemented (a pilot surveillance in Imereti region) for strengthening epid-surveillance system and laboratory capacity has been strengthened in Kutaisi zonal diagnostic laboratory (ZDL).

Zoonotic diseases: Since 2015, rabies in humans hasn’t been registered in Georgia. In 2017, number of leptospirosis (64 registered with 6 lethal outcomes) and anthrax (33 cutaneous form, and oropharyngeal anthrax which was registered for the first time in the country) cases have decreased; number of Hantavirus infections has increased (16 registered cases). Epid-surveillance was also conducted on poxvirus infections (33 confirmed cases), Crimean-Congo haemorrhagic fever (5 confirmed cases). National Food Agency, with a request from NCDC, has processed cattle and their habitat in foci. New focus of Tularemia has been found in Imereti region, which requires additional research.

Transmissible Diseases: In the Black Sea resort zone of Georgia activities to fight against vectors that transmit diseases were underway. In West Georgia, monitoring was carried out for vectors' (mosquitos) quantitative, species- and age-related control. Implemented antimalarial works in the reservoirs also were monitored.

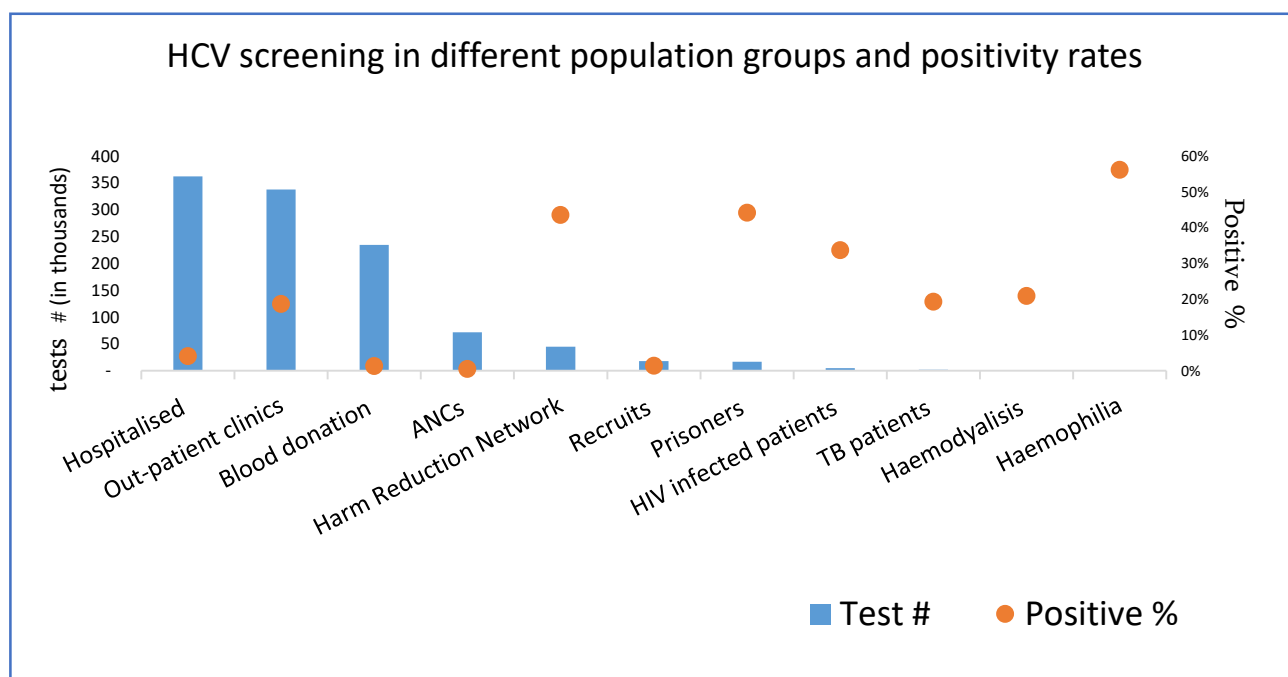
Food and Waterborne Infections: During 2017, significant decrease tendency of suspicious infectious diarrhea cases was recorded. Notifications about water and food related epidemiological outbreaks was regularly submitted to the National Food Agency, Together with them 2 main outbreaks were epidemiologically studied and laboratory investigated. Because of implementation rotavirus vaccination in the country, according to sentinel surveillance data, decrease of rotavirus diarrhea in children under 5 was recorded.

HIV and Syphilis mother to child transmission: Mother-to-child transmission of HIV and syphilis Elimination Strategy and Action Plan was developed. Case-based reporting was

established for suspicious Syphilis positive cases in pregnant women. Every case of congenital and/or pregnant syphilis is subject to epid-surveillance, for which the "syphilis of pregnant women" - as a separate nosology was added in EIDSS.

With the WHO support, the new tool (STI SPECTRUM) was introduced for estimation of the sexually transmitted diseases, which is an additional instrument to assess EMCTC (Elimination of mother-to-child transmission of HIV and Syphilis) data reliability.

Hepatitis C: Elimination of hepatitis C is the high priority in Georgia. NCDC is responsible for screening, detecting new cases and preventing of disease spread. In 2017 was developed state standard "Hepatitis C Screening Protocol", which is based on WHO guidelines for chronic hepatitis C infection's screening, care and treatment and results of 2015 sero-surveillance national study and Hepatitis C Technical Advisory Group (TAG) recommendations. In order to unify the existing data on hepatitis C, the screening electronic module was created and implemented by NCDC.



More than 600 screening providers nationwide upload data in the module. Unique identifier (Personal ID Number) allows linkage between different databases as: HCV treatment, blood donation, hospitalization and birth registry. At the end of 2017 number of registered screened cases in the module was around 1,4 million, with 933 000 individual unique case. Primary screening results revealed 10,9% positive cases. HCV screening company was underway for different population

groups, among which, in the frames of the study conducted with the support of Global Fund, 25 328 injecting drug users (IDUs) were screened and 30% of them (7 526) showed positive. For some focus groups PCR testing was carried out.

Within the framework of the Hepatitis C State Program, HIV/AIDS and Hep C Tandem Testing was carried out with support of Global Fund AIDS Program (HIV diagnostic tests) by the NCDC regional laboratories, mobile groups and NGOs that carried out HCV and HIV/AIDS free of charge studies. Within the framework of the state Program 297 000 rapid diagnostic tests and relevant laboratory consumables were purchased and distributed. 744 983 beneficiaries are registered in hepatitis C electronic screening module, who did screening in 2017. In addition, in 2017 hepatitis B immunization program for patients with HCV was initiated.

It is important to state, that the World Hepatitis Summit in Sao Paulo (Brazil), granted Georgia the status of the NOhep¹ Visionary of the region.

Tuberculosis: The burden of TB remains significant public health problem for Georgia,

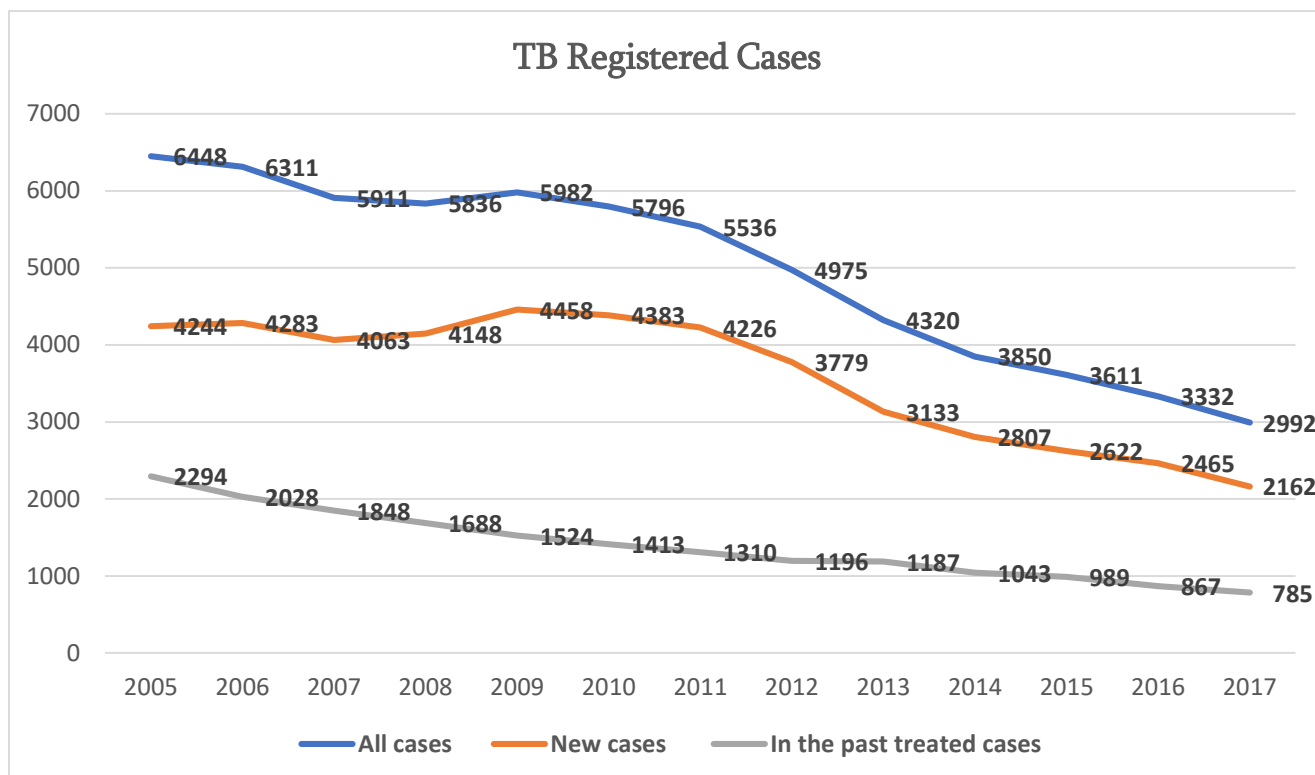


Introduction of the Georgian HCV elimination program in the World Hepatitis Summit

however, according to the 2017 data, there is a tendency to decrease.

During 2017, in order to reduce disability, morbidity and mortality rates caused by TB as a communicable disease, NCDC conducted epidemiological surveillance, laboratory tests for diagnosis of Tuberculosis, provided the 1st and partially 2nd (25%) line drugs for TB treatment, as well as patient treatment adherence incentives. The activities were implemented under several state programs and components. They are: “Epidemiological surveillance”, “Tuberculosis management laboratory control and sputum logistics”, “Purchase, reception and transportation of the first and second line TB drugs”, “Financial incentives for improved adherence to MDR TB treatment” and Global Fund program “Sustaining universal access to quality diagnosis and treatment of all forms of TB in Georgia”. Standard surveillance was carried out continuously over the year, including laboratory

¹ The NOhep Visionaries Program is a global campaign that brings key change makers to accelerate action to eliminate viral hepatitis by 2030



testing for TB diagnostic, patient provision with the 1st line and partially (25%) the 2nd line medicines, and measures for improved treatment adherence of TB patients.

During reporting period, 4 987 contacts of 1 500 patients were examined, anti TB medications were purchased and 634 MDR and 2 833 sensitive patients received cash incentives for good treatment adherence, under the Global Fund program support.

During the reporting period, according to preliminary results, approximately 2 992 TB cases were registered in the country. 342 MDR and extensively resistant patients were enrolled in the treatment. Country introduced the modern diagnostic methods approved by the World Health Organization: culture on solid and liquid media, rapid diagnostic methods to diagnose TB and MDR TB and drug sensitivity tests. GeneXpert MTB/RIF systems for rapid diagnosis of TB are used all over the country. In 2017,

additional 19 GeneXpert machines were installed in general health facilities and are used for early disease detection and reduction hospital transmission of TB. Preliminary data share of TB patients tested for HIV increased further and reached 95%. Patients diagnosed with TB were also tested for Hep C.

Treatment success rate in sensitive TB cases is 83%, however, MDR TB treatment success rate is

VOT (Video Observed Therapy) application



still a challenge, with indicated 51% (cohort of the year 2015).

In 2017, a special application was developed for Video Observed Therapy (VOT), making treatment more flexible. The application enables patients to make a video record at any flexible for him circumstances and send it later on for supervision. A pilot project “Integration of Hepatitis C, Tuberculosis and HIV Detection at Primary Healthcare Level” was initiated in Samegrelo-Zemo Svaneti region in the reported year.

TB management guideline and protocols were updated in line with the latest WHO recommendations with support of local and international experts. Newly developed document was submitted for approval to the MoLHSA. TB service delivery infrastructure has been improved and a new outpatient DOT center was built in Tbilisi.

Three projects were carried out in 2017 to raise

were held: information-communication meetings with students; Information-communication-education campaign across the country in general and high-risk groups in order to raise awareness on TB. In the frames of the campaign information materials (video and audio clips, booklets, flair, shirts, calendars, etc.) were produced in Georgian, Armenian and Azeri languages. An innovative project implying support for MDR TB patients needs for improved treatment adherence. 179 beneficiaries were covered with this service.

HIV/AIDS: In order to reduce morbidity, disability and mortality rates caused by the HIV/AIDS as a communicable disease, in 2017, the center has been carrying out the work in the frames of the HIV/AIDS state Program as well as the Global Fund’s “Sustaining and scaling up the existing national responses for implementation of effective HIV/AIDS prevention activities, improving survival rates of people with advanced HIV infection by strengthening treatment and care interventions” program, which aims to improve accessibility to the highly effective treatment and care services of the patients with HIV/AIDS, prevention of HIV/AIDS transmission, especially among the high risk groups (injecting drug users, commercial sex workers, men who have sex with men, and inmates).

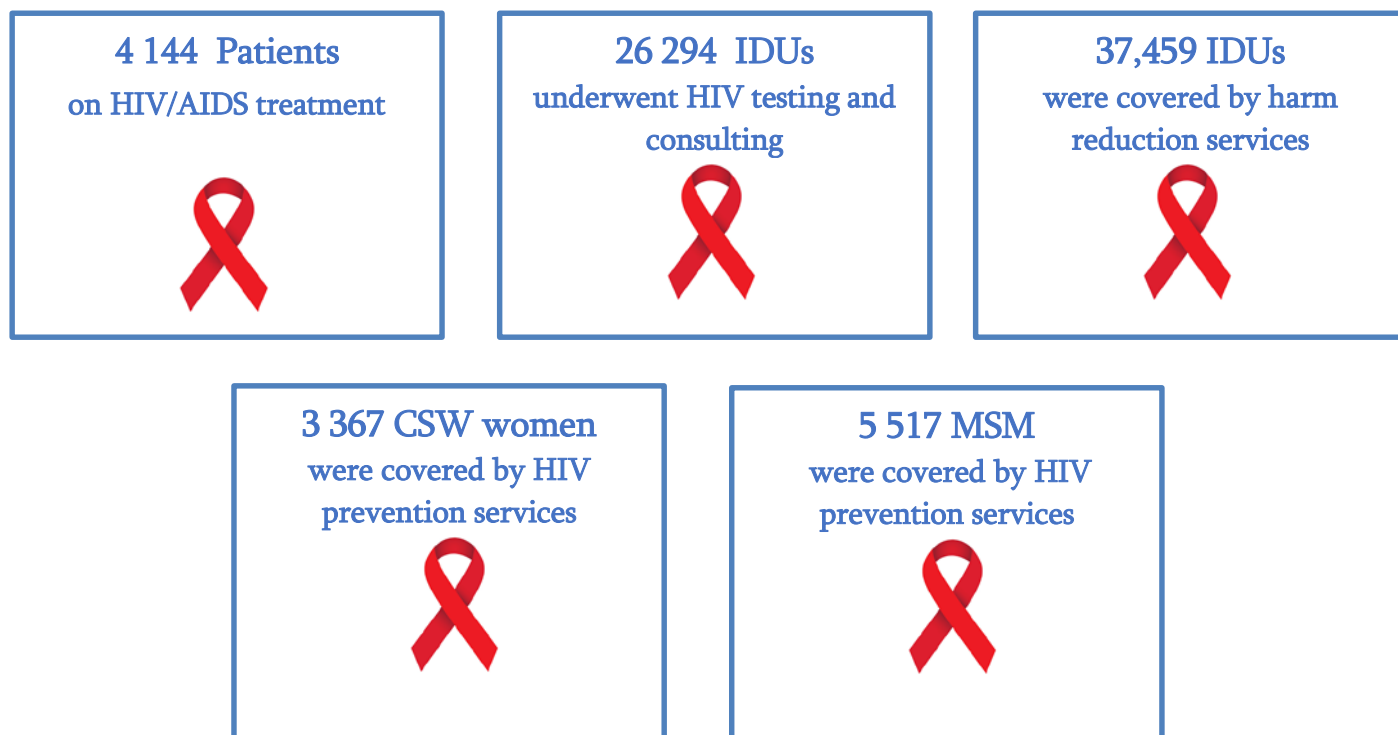
Year 2017 was marked by the substantial decline in the new incidence of the HIV (up to 12%). Herewith, the number of people tested for HIV/AIDS did not decline in 2017 and only with the state funding, 43 829 HIV/AIDS screening tests have been conducted. By year 2017, overall 6 727 cases of HIV infection had been registered in Infectious Diseases, AIDS and Clinical Immunology Research Center (IDACIRC) historically. During the reporting period, 633 new cases of HIV were registered.



World TB day

public awareness with the involvement of civil sector.

Providing TB related information to different target groups (including clergy and parish) through educational campaign; 204 persons were screened for the detection of active cases of Tuberculosis, 28 of which were sent to medical facilities as presumptive TB patients. In addition,



Important steps have been taken according to the sustainability and takeover plan of the Global Fund: The first line anti-retroviral drugs have been successfully purchased by the state. In addition, in 2017, for the 1st time, 25% of the second line anti-retroviral drugs were purchased by the State (the remaining 75% of the 2nd line drugs were purchased in the frames of the Global Fund program).

In 2017, 4 144 HIV patients received ARV treatment (1st line drugs were administered to 3 425 patients, 2nd line drugs to 719 patients), including 66 pregnant women. 53 newborns underwent preventive treatment. For effective therapy, the early diagnostics is essential. So far, 45% of the diagnostics happens at the late stages of the disease. During the reporting period, more resources were directed for preventive activities in high-risk groups.

In the frames of the Global Fund and the State program, every HIV positive patient in Georgia has an access to vital, free, highly effective anti-retroviral treatment and corresponding high-quality laboratory diagnostic. In addition to this,

the treatment adherence monitoring is being carried out.

Population size estimation survey among injecting drug users (IDUs), conducted in 2017, revealed that compared to 2014, the number of IDUs increased from 49 7000 to 52 500, which ranked Georgia the alarming third place globally for number of IDUs per 100 000 population. In the frame of Global Fund programs, 14 service providers in 11 cities of the country implement the harm reduction activities. During the reporting year, 37 459 beneficiaries used harm reduction services, 18 321 beneficiaries were screened for Tuberculosis, out of whom 284 were referred to the National Center for Tuberculosis and Lung Diseases. 28 patients tested positive and were enrolled into the treatment program.

According to the WHO recommendations, Georgia, as a pioneer in the Region, initiated PrEP pilot program among MSM. In the PrEP program, high risk MSMs receive ARV medicines for preventive purposes that contributes to combat increasing HIV epidemic among MSM

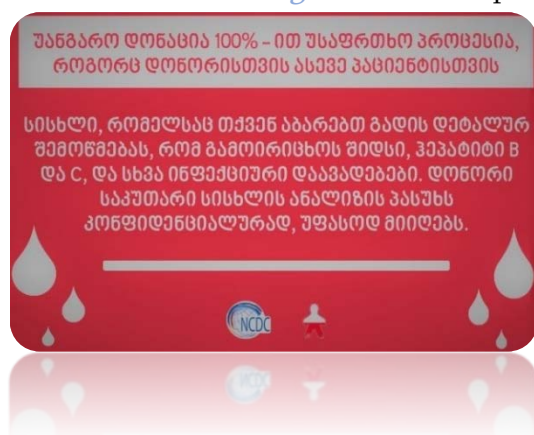
population. By the end of 2017, 20 MSM were involved in the PrEP program.

Important achievement of the program was the creation of the unified database of the HIV real-time preventive measures, which (as planned) will be linked with HIV and hepatitis C treatment databases. Such links enable preventive services providers to follow-up the beneficiaries' treatment involvement status and provide support for adherence if such needed.

Antimicrobial Resistance, Infection Control and Nosocomial Infections:

Effectiveness monitoring of infection control and prevention measures has been performed in the country's 3 main cities' 65 clinics together with the Healthcare Department of MoLHSA, as a result of which in comparison with 2016, the number of notifiable nosocomial infections has been increased almost 2,5 times. Piloting of instant prevalence study has been started. Results of the survey conducted according to the "antimicrobial resistance surveillance" protocol were developed in the framework of the involvement and collaboration of laboratories in CAESAR and placed on the WHO's European Office's web page.

"Safe Blood State Program" serves to prevent



Newsletter from the campaign "I am a donor"

Challenges

- Increase of immunization coverage in target groups and strength advocacy and continuous supply of general population with high-quality vaccines and immunoglobulins
- Maintaining Sustainability and financial accessibility of the State Immunization Program after the GAVI support ceases
- Improvement of functioning of existing monitoring and assessment systems by public health territorial centers, as well as implementation of performance-based payment mechanism
- Maintaining of malaria- and poliomyelitis-free status in the country
- Strengthening of monitoring on antimicrobial resistance and infection control
- Verification of elimination of mother to child transmission of HIV and syphilis
- Establishing One Health principles
- Sustaining routine and sentinel site surveillance systems
- Active involvement of municipal-administrative and hospital sectors for effective functioning of surveillance system
- Managing measles outbreak
- High level of HIV infection-associated stigma among general population
- Low detection rate of HIV infection, and high proportion of detections at a late stage
- Low rates of identification of persons that belong to HIV/AIDS high risk groups and low rate of retrieval of lost patients from the surveillance
- Strengthening the supportive environment for enrollment of IDUs in 'Needle and syringe program'
- Introduction of electronic module for registration of Tuberculosis cases
- Continuation of Tuberculosis services, taking into account the terms of participation in the program for part of private providers
- Minimum licensing requirements and non-effective mechanisms of quality assurance in transfusiology

spread of transfusion-transmissible diseases and minimize risk of infection via transfusion. The program includes screening of donor blood for

Key Achievements

- Accreditation of biosafety training course by Professional Development Council of the MoLHSA and conducting 1st training for foreign specialists
- Accreditation of general bacteriology laboratory and serology laboratory of hepatitis, measles and rubella and rotaviruses according to ISO 15 189 standard
- Implementing the National EQA Program for molecular testing of HCV for the laboratories involved in elimination program and development of National Quality Program “GEOMICQUA”
- Equipping General Bacteriology and Serology Laboratories with modern equipment
- Implementation of referral for intestinal pathogens according the One Health approach
- The 1st time validation of manual bacteriological tests in the country
- Implementation of detection methods for resistant genes
- Establishment of sequencing of Measles/Rubella and detection of measles D8 genotype
- Uploading genome sequences of *B. anthracis* and *Brucella* Georgian strains in the international data base (NCBI)
- Identification of mosquitoes spread across Georgia using sequencing-based new molecular method of DNA Barcoding
- Uploading of 50 mosquito sequences into BOLD Systems database

hepatitis B and C, HIV and Syphilis by blood banks. Another priority of the program is to support unpaid, repeated donations and gradually replace paid donations with unpaid donations. 77 149 donations were performed at participating blood banks throughout the year, 21 685 of which were unpaid. The unified blood donor electronic database was modernized.

The Input of Lugar Center for Public Health Research

Biosafety and Especially Dangerous Pathogens: Biological materials have been systematically controlled at Lugar Center, thematic trainings were developed, accredited and conducted for the personnel of the Lugar Center and Zonal Diagnostic Laboratories.

344 strains, isolated and identified on the territory of Georgia were registered in Pathogen Asset Control System (PACS), including 70 especially dangerous pathogens. 36 *Shigella*, 2 *L. pneumophila*, 13 *F. tularensis*, 59 *B. anthracis*, 188 reference strains were prepared for research, and 12 ATCC and vaccine strains (anthrax, tularemia, plague, brucellosis) for quality control and provided to the laboratories of Lugar Center. The reference strains were also provided to the laboratories of Imereti, Adjara and Shida Kartli. Internal (laboratories of Lugar center) and external (medical centers and clinics) quality control have been carried out. The maps of especially dangerous pathogens (*Y. pestis*, *Brucella spp.*, *B. anthracis*) deposited in the repository were updated using GIS.

Especially Dangerous Pathogens	
Studied sample	State program/scientific grant
Soil samples	- / 1030
Samples of Ectoparasites	761 / 117
Samples of Rodents	1285 / 80
Food samples	5 / -
Clinical samples	145 / -
Confirmation of cultures of especially dangerous pathogens	18 / -

The epizootiological monitoring of natural foci of infectious diseases, including especially dangerous pathogens were conducted in 35 municipalities of the country. 25 936 ha open and 71 650 m² closed fields were studied. During the year *Dermacentor marginatus*, *Hyalomma marginatum*, *Haemaphysalis punctata*, *Haemaphysalis sulcata*, *Haemaphysalis parva*, *Haemaphysalis warburton*, *Rhipicephalus sanguineus*, *Rhipicephalus bursa*, *Ixodes ricinus*, *Rhipicephalus annulatus*, *H. Aegyptius* tick species and *Ae. albopictus*, *Ae. aegypti*, *Ae. caspius*, *Ae. vexans*, *Ae. geniculatus* *An. maculipennis*, *An. claviger*, *An. plumbeus*, *An. pulcherrimus*, *An. sacharovi*, *An. hyrcanus*, *Cx. pipiens* mosquitoes were collected. Prevalence of Visceral leishmaniasis was studied, cases of *Streptococcus pneumonia*, antimicrobial resistance, bacteriological investigations of outbreaks (2 outbreaks of intestinal infections in kindergarden: Shigellosis, Salmonellosis) were carried out.

In 2017, general bacteriology laboratory got ISO 15189 accreditation. Standardization process of laboratory diagnostics and media preparation completed and Georgia became member of GLASS.

Virology, Molecular Biology and Genome Research: Investigations for presence of poliomyelitis and other enteroviruses were performed on the samples from patients with

Challenges

- Maintaining of ISO 15 189 accreditation standard and accreditation of other laboratories
- Extension and perfection of national external quality control program
- Improvement of connection between central and regional laboratories
- Elaboration of laboratory standard operating procedures
- Adoption and implementation of latest methods
- Making LIMS fully functional

Acute Flaccid Paralysis (AFP) collected throughout Georgia and Armenia as well as on environmental surveillance samples from sewage water sampled in various regions of Georgia (192 samples in total). In addition, 981 nasopharyngeal swab samples were

tested for Influenza and other respiratory viruses using real-time PCR. Obtained viral cultures were typed using hemagglutination inhibition method and for further investigations sent to Finland (WHO reference laboratory) and UK (WHO Influenza Collaborative Center).

Laboratory was actively involved in serology and molecular testing under the state programs (25 755 serology tests in total including HCV coreAg, IgM, IgG tests on Abbott Architect, i2000 5 240); WHO program on environmental surveillance of polio in 2017 in Georgia, as well as surveillance of enteroviruses in Georgia under GDD project etc. ISO 15189 accreditation was achieved in hepatitis, measles-rubella and rotavirus serology testing. Under collaborative scientific project with USAMRIID “Molecular Virology Studies in Georgia” new technology equipment Magpix Luminex was provided to Lugar Center.

Challenges

- Establishing public health emergency operation center
- Multi-sectoral involvement and awareness raising in the implementation of Global Health Security and International Health Regulations
- Development of Disaster Preparedness and Response Training Course for public health workers

Public Health Emergency Preparedness and Response

Key Achievements

- Updating IHR (2005) Georgian version and translation of Point of Entry core capacity assessment tool
- Participation in the WHO project „Voices of the Region”

Within Global Health Security Initiative, International Health Regulations and in order to respond and be prepared for public health emergencies, National Center for Disease Control and Public Health, as a national focal point for IHR in Georgia carries out risk assessment and relevant communication and promptly notifies WHO contact point about the unusual, unexpected public health risk with potential to spread internationally and/or posing risk to international travel and trade.

Throughout the year third edition of IHR was updated and Point of Entry core capacity assessment tool was translated into Georgian. Georgia participated in the project "Voices of the Region", a video was recorded about Georgia's experience and successful implementation of IHR. In order to improve cooperation with neighboring countries in the fight against communicable diseases “Bio surveillance Network of the Silk Road” was established.

Reducing Morbidity, Disability and Mortality Caused by Non-communicable Diseases

Non-communicable diseases (NCDs) are a significant challenge to global health. The growing tendency of morbidity and mortality is a heavy burden for the population and health care system; Consequently, it is a

Key Achievements

- NCD Strategy and Action Plan
- Draft National Cancer Control Strategy and Action Plan
- National Iodine Survey supported by UNICEF
- Bloomberg Philanthropy, World Lung Foundation (WLF) and International Union Against Tuberculosis and Lung Diseases ("The Union") project "Supporting endorsement and enforcement of strengthened legislation on tobacco demand reduction in Georgia in order to meet WHO FCTC requirements"
- The only partner country in the European region selected for the "FCTC2030" project
- Perinatal Health Second Report
- The project "Strengthening of micronutrients deficiency surveillance systems" supported by CDC
- The project "Assessment of Knowledge, Attitudes and Practices in Prevention and Control of Non-Communicable Diseases in Primary Health Care in Tbilisi and Kakheti" supported by WHO
- The survey on early marriage in collaboration with the UNFPA, UNICEF and Promundo
- The repeated study in children with high blood lead level supported by CDC

hindering factor for global, social and economic development.

Major NCDs such as cardiovascular diseases, cancer, chronic respiratory diseases and type 2 diabetes are characterized by common risk factors: tobacco use including passive smoking, unhealthy food with high levels of fat, salt and sugar, insufficient physical activity and excessive alcohol consumption. These four most important risk factors with the Intermediate risk factors, such as obesity, hypertension, high blood glucose and cholesterol levels, became the most important and serious health problem.

Underlining the existing burden of NCDs, the country is continuously undertaking measures to improve the policy of the NCD surveillance, prevention and management, as well as the development of policies and effective interventions. The NCDs Prevention and Control National Strategy approved in 2017, is based on WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020 and develops the basic principles of WHO's European Strategy Health 2020. It aims at achieving global objectives in prevention and control of non-communicable diseases.

The working on NCDs is conducted in several different directions - NCDs and trauma, maternal and child health, health promotion, environmental health and tobacco control. The Non-Communicable Diseases Department in collaboration with the departments on medical statistics, state programs and

public health regional management heads the NCDs direction.

The main challenges for the NCDs are considered to be the incomplete monitoring of the NCDs, the incomplete monitoring and response to maternal and perinatal death cases, the incomplete register of the death cases of reproductive age women and 0-5 years old children in the EIDSS, the lack of engagement of the regional centers in terms of NCD prevention and surveillance, health promotion, maternal and child healthcare.

Risk-factors and Health Promotion: The need for interventions and systematic reforms is important for improving the health status of the population, that will promote healthy lifestyle, early detection of disease and general strengthening of preventive practice. It is important to control the main risk factors that seriously threaten human health and cause the heavy burden of morbidity and mortality caused by cardiovascular and respiratory diseases, diabetes, cancer, infections and trauma.

The Health Promotion State Program in 2017 included 7 components: strengthening tobacco control, healthy nutrition education, awareness on excessive alcohol consumption, promotion of physical activity, HCV prevention and the promotion of education of population, promotion of mental health and substance dependence prevention, strengthening of health promotion.

The program covered informational and educational media campaigns (through social media, television, radio, print and online media); The Communications Campaign

Action Plan was prepared; The educational materials were prepared and published including Armenian and Azeri languages; Media trainings were conducted and news and social videos were prepared; the action plans for communication campaigns were created for alcohol; promotion of psychical activity; substance dependence prevention and the respective profiles were created in the social networks; hepatitis C screening activities were performed; Fostering psychical activities / sports activities, etc. Through the social media platform trainings on media communication issues were undertaken by structural units of the NCDC. Within each component of the program the effectiveness of the communication campaigns in 2017 was done through the Facebook Analytics.

Tobacco: tobacco use is one of the most important and at the same time preventive public health problem. The global tobacco epidemic kills about 7 million people annually, including 6 million smokers, and about 1 million passive smokers. If tobacco is associated with about 10% of deaths worldwide, this figure is 22% in Georgia.

In 2017 Georgia was one of the 15 countries in the world and the only country from the WHO's European Region that was selected for the "FCTC 2030" project, funded within the framework of the Official Development Assistance (UK), which gave us a unique opportunity to achieve SDG goals more successfully by means of the Framework Convention on Tobacco Control. Within the

framework of the project the i.e. Investment Case - Calculations of Tobacco Economic Damage was carried out. The estimates show that direct and indirect expenditure in Georgia is 824.9 million GEL, which is 2.43% of the annual GDP. In fifteen years' time, the country will avoid 53 100 deaths, reducing the total economic expenditure associated with tobacco by 3.6 billion GEL, through the implementation of the four priority directions of tobacco control (tobacco taxation, prohibition of smoking in public spaces, the ban of tobacco advertising, promotion and sponsorship, the regulations on packing and marketing tobacco products). With each 1 GEL invested in tobacco control, the country will gain 161 GEL reverse investment in 5 years and 357 GEL in 15 years.

In 2017, the Parliament of Georgia adopted a package of legislative amendments (to the Laws on Tobacco Control, on Advertising, on Broadcasting, on Organizing Lotteries, Games of Chance and Other, Administrative Offenses Code) to the new generation tobacco control law as Georgia is becoming an advanced country in the region with fighting against the tobacco epidemic and the morbidity and mortality caused by tobacco use. The aim of the amendments to the law is to effectively protect non-smokers, especially children, from the exposure of the secondhand smoke. The major changes refer to the exclusion of tobacco industry interests and the transparency of the relationship between tobacco producers and public organizations/individuals in the process of decision preparing, making and



Healthcare and Social Issues Committee session during discussion of legislative amendments on tobacco control

implementing in the healthcare sector; Clearing public places from tobacco smoke and the ban of any kind of advertisement, popularization and sponsorship of tobacco products from 1 May, 2018; Ban on placement of tobacco products and accessories in outdoor shops and shop windows from 1 September, 2018, etc.

Within the framework of the Tobacco Component of the Health Promotion State Program, the observation has been carried out to monitor the prohibition/restriction of tobacco smoking in institutions through selective method (medical, educational, public, state, private institutions and hospitality sector), in commercial entities in Tbilisi and other major cities (more than 400 institutions have been enrolled in this observation for the reporting year); Pilot training of school physicians was held on the issues of tobacco control in schools; Open discussion was held with the representatives of the hospitality business and media regarding the new regulations as defined by the Tobacco Control Law and etc.

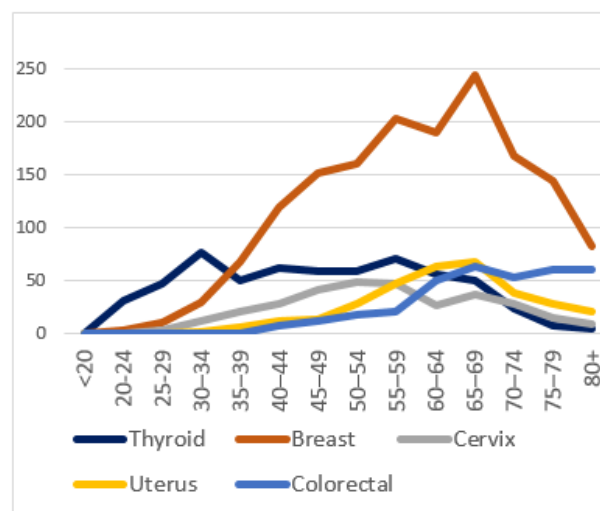
In 2017, the US National Institutes of Health (NIH) approved the international project "Smoke-free Air Coalitions in Georgia and Armenia: A Community Randomized Trial".

The respective works are being carried out according to the main directions of the Tobacco Control National Strategy and Action Plan.

Cardiovascular Diseases: Diseases of the blood circulatory system are characterized by increasing trend of incidence and prevalence. Increasing incidence is particularly noticeable since 2013, so it should be explained by the improvement of access to medical services, but there is still an increase in the risk factors, which was shown by the risk factor study (STEP 2016). 59 % of blood circulatory system diseases in 2016 was attributed to arterial hypertension; different forms of angina (35 %), myocardial infarction (6 %), other forms of acute ischemic heart disease (8 %) and chronic ischemic heart disease (51 %) represent the structure of the ischemic heart disease. Georgian Society of Hypertension and NCDC have introduced a blood pressure measurement month in 2017.

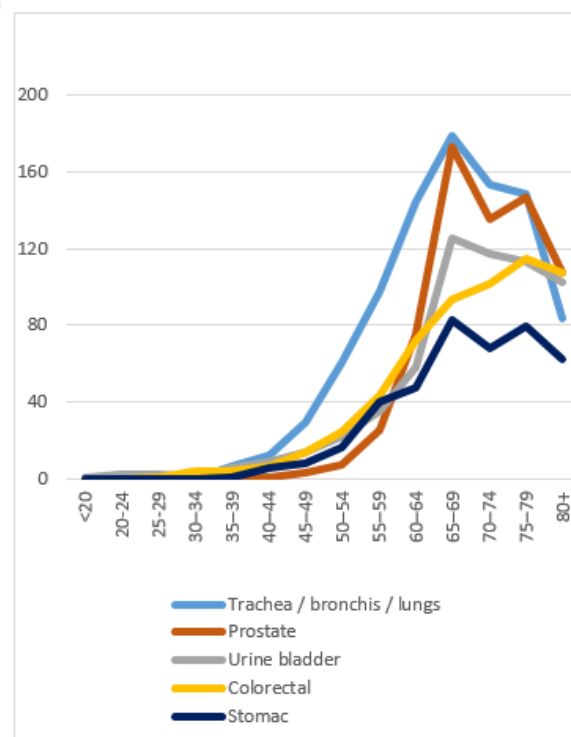
Cancer: According to Cancer Population Register data, 10 097 cases of oncological diseases were registered in 2016, 56 % of which were reported in women and 44 % in men. Only 38.6 % of the diseases were revealed at the first and the second stage. The most common sites of cancer among women are: breast, thyroid gland, cervix, uterus, colorectal cancers.

Age-specific indicators of 5 most common sites of cancer among women, 2017



The most common sites of cancer among men are trachea/bronchis/lungs, prostate, urine bladder, colorectal and stomach. Detection

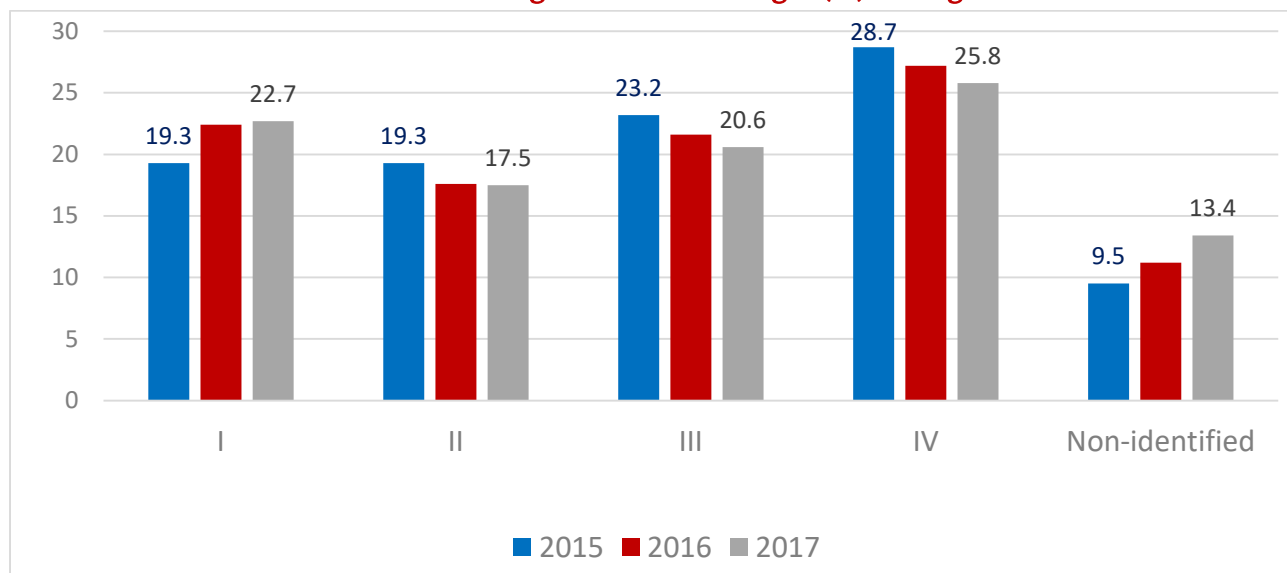
Age-specific indicators of the 5 most common sites of cancer among men, 2017



on the 1st and the 2nd stage of the disease is especially low in the case of trachea/bronchials/lung and stomach cancer (9.2 % and 14.7 % respectively). The updated version of the National Strategy on Cancer Control and the 2017-2020 Action Plan was prepared, and the National Council on Cancer was established by the order #01-206/n of 25 September, 2017 of the Minister of Labour, Health and Social Affairs of Georgia.

Breast cancer and prostate cancer screening coverages under the Early Detection and Screening State Program are still very low (breast cancer - 8.9%, cervical cancer - 9.7%, colorectal cancer - 2% and prostate cancer management - 2.7%). The share of breast, cervical and colorectal cancer at the first and second stages are only 52.3%, 55.3% and 27.5% respectively, which is caused by cancer

Cancer incidence according to the disease stages (%), Georgia, 2015-2017



screening low inclusion and the lack of addressing the problem.

Chronic Respiratory Diseases: In recent years the dynamics of prevalence and incidence of chronic respiratory diseases are increasing. A sharp increase has been observed since 2014, which should be explained by increased access to medical services under the Universal Healthcare Program, while asthma and asthma status are characterized by declining tendency.

Diabetes: Burden of diabetes is quite high in the country and increases from year to year, which is somewhat related to the increase of access to services within the universal healthcare program.

Traumatism: In Georgia, body injury is the fourth cause of death; Road traffic injury is one of the leading cause in the structure of general injury. As a result of road traffic accidents, hundreds of people die every year and thousands of people receive injuries of

various gravity. In recent years, several steps have been taken to improve the situation, a number of legislative amendments have been implemented and regulations have been changed. According to the WHO data,



Canpaign dedicated to the road safety and injuries

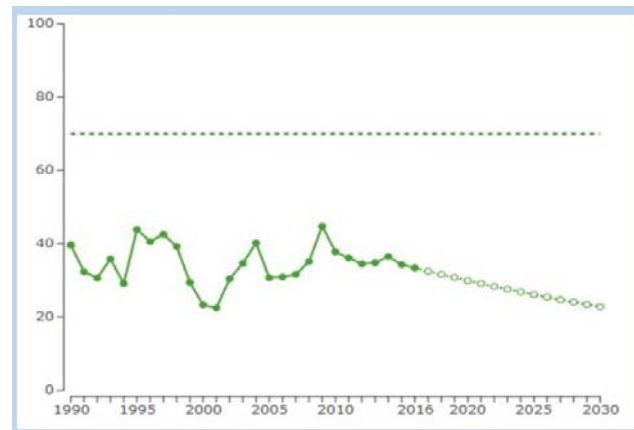
Georgia has moved from 9th to 12th places, in the list of countries assessed by mortality rates as a result of road traffic accidents.

Maternal and Child Health: Maternal, child and adolescent health is one of the priorities for public health and is closely linked to the development of healthcare and economic systems. Despite the decrease in maternal and infant mortality, it still remains as a challenge for the country.

From 2016 the preparation and submission of perinatal report is carried out. The data is collected from three sources: (1) databases of the State Services Development Agency; (2) Data on reproductive age women and under 5 children mortality, provided by the Electronic Integrated Disease Surveillance System (EIDSS) and routine statistics in NCDC; (3) Maternal and child death/stillbirth mandatory reporting system in the MoLHSA and Division of Population

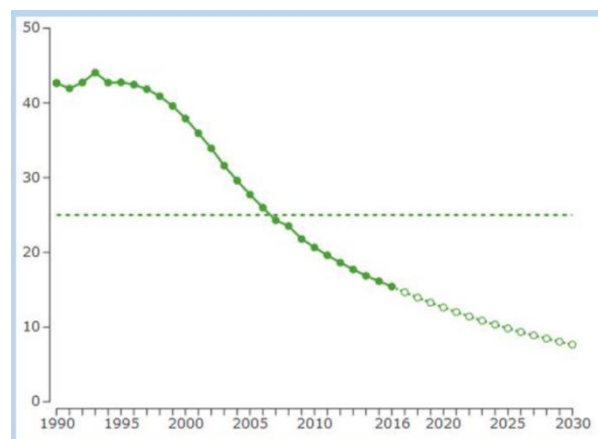
Census and Demographics of National Statistics Office of Georgia (GeoStat).

Maternal deaths indicators per 100 000 live births in Georgia



In 2016, the stillbirth rate per 1000 births was - 9.8, the neonatal mortality rate per 1000 live births - 6.3, the maternal mortality rate per 100 000 live births - 22.8.

Under 5 Child mortality rate per 1000 livebirths in Georgia



In the frame of the “*Maternal and Child Health State Programme*” 47 555 pregnant women have been screened within the component of “Defining B and C hepatitis, HIV/AIDS and syphilis in pregnant women and prevent mother to child transmission of

hepatitis B". 37 593 newborns were checked in the frame of the newborn hearing screening. 1 283 children were examined within the "Prevention of light and moderate mental development disorders in 1 to 6 Age children" component under the "Early Detection and Screening" state program. Since 2017, the program was enhanced by the Retinopathy Screening Pilot of Premature Babies under which 553 premature newborns were primarily screened.

NCD surveys: Georgia has introduced WHO STEPS methodology for effective control of NCDs.

The STEPS surveys were conducted twice - in 2010 and 2016, by means of technical and financial support of WHO, which gave to the country the unique opportunity to convey data not only from other countries but also to monitor and evaluate non-communicable diseases and tendencies, as well as monitor and assess of risk factors in Georgia.

According to the survey data: increased number of tobacco consumers, for the first time, was diagnosed with a cotinine test in the urine to provide a real distribution of smokers; alcohol consumption during life and consumption over the last 30 days had increased; nutrition pattern changed - fruit/vegetable consumption had increased; amount of time spent on physical activity during the day had decreased; physical indicators - increased distribution of obesity and overweight, increased blood pressure; biochemical indicators - the average indicators of fasting glucose and cholesterol decreased; combined risk factors - portion of

the population with three and more risk factors had decreased; visits to physicians - physician/medical personnel was called in 46.3% of the survey population during the last 12 months and only 18.2% was a routine medical check-up. the share of people who have never measured a blood pressure had decreased, 37.7% of respondents have arterial hypertension, controlled hypertension was only in 16.4%; 10-year cardiovascular risk - 28.8% of the 40-69 age group had cardiovascular disease or their 10-year cardiovascular risk $\geq 30\%$, and 28% of them were treated/consulted to prevent infarction and stroke.

National assessment of nutritional/iodine status and use of iodized salt in Georgian population confirmed the effectiveness of universal iodizing program and defeat of iodine deficiency.

The project "Strengthening of micronutrients deficiency surveillance systems" - sentinel surveillance system is ongoing with the support of the CDC.

Based on international recommendations in November-December 2017, a repeatend study was conducted in children whose blood lead level (BLL) was high (≥ 5 mcg / dl) in 2015. The study was conducted in the Iashvili Children's Central Hospital, with the support of the NCDC and CDC. The study also intended to identify lead content in air, water, spices and wall painting and if necessary - in the soil. The lead analysis in blood samples was carried out at the Iashvili Children's Central Hospital; analyses in the air, water, spices, paintings and soil was to be done by the National Environmental and

National Food Agencies. Samples were sent to the CDC Laboratory for confirmation.

With the financial and technical assistance of the WHO was implemented the project "Assessment of NCD Prevention and Control Knowledge, Attitudes and Practices at the Primary Healthcare in Tbilisi and Kakheti", Study of Children's Obesity Surveillance Initiative (COSI). Qualitative research on the issues of early marriages was conducted across the country with the support of the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF) and international organization "Promundo".

Challenges

- Insufficient monitoring of the NCDs
- Insufficient surveillance and response to maternal and perinatal death cases
- Underreporting of death cases in the EIDSS
- Lack of involvement of the regional public health points in the NCDs prevention and surveillance
- Unified, continuous social media campaigns for increasing awareness and popularity of health promotion
- Enhance tobacco controlling and implementation of the new regulations
- To reach 100% coverage for the pregnant women with at least one visit during the antenatal care



Environmental Impact and Behaviour Risk-factors Assessment and Correction for Improving Population Health

Key Achievements

- EU-supported Twinning project "Enhancing Environment and Health Systems in Georgia"
- Draft National Environmental Health Action Plan (NEHAP)
- The first Georgian-language registry of hazardous chemical substances and Glossary of Terms on Chemical Safety, created in cooperation with the WHO and the Federal Agency for Environmental Protection of Germany (UBA)
- Participation of the Georgian delegation in the 6th Ministerial Conference on Environment and Health (Ostrava, Czech Republic)
- Empowering environment health direction with human resources and formation of the project management team

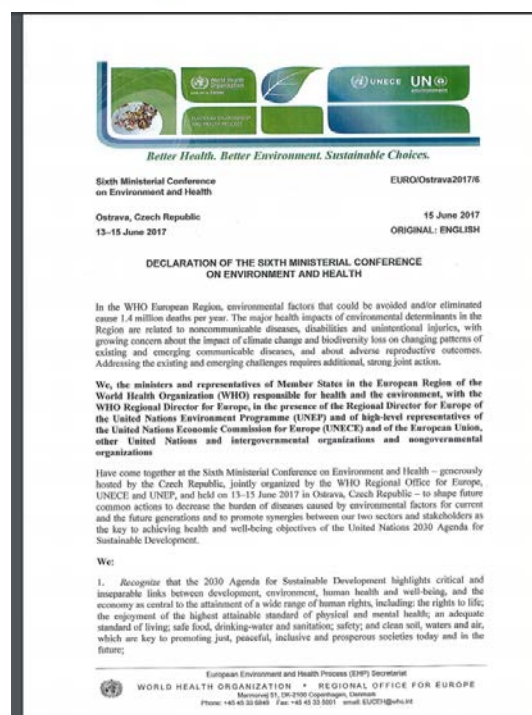
Environment presents one of the most important factor affecting human health. Unhealthy Environment primarily increases morbidity level of population and poses latent damage to human body, therefore it remains a serious problem in the whole world.

Environmental risk factors - air, water and soil pollutions, impacts of chemical substances, ultraviolet radiation and climate change – contribute to more than 100 diseases and types of injury.

According to WHO, an estimated 12.6 million deaths each year are attributable to the living or working in an unhealthy environment – nearly 1 in 4 of total global deaths. In 2016 WHO launched a new

assessment "Preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks". The main message emerging from this new global assessment is that premature death and disease can be prevented through ensuring a healthy environment and reducing of the impact of risk factors. Consequently, growing importance of this issue necessitated to put accent of the third priority of NCDC on Environmental Impact and Behaviour Risk-factors Assessment and Correction for Improving Georgian Populationton Health.

Representatives of the WHO European region and ministers of the Member States gathered at the 6th Ministerial Conference in Ostrava (Czech Republic) within the



Declaration from the 6th Ministerial Conference

framework of the UN Environment Protection Program to elaborate joint actions for the years to come as a precondition for achieving health and well-being goals for sustainable development.

The conference adopted a declaration, by which the WHO Member States committed to enhance their efforts towards improvement of environment for improving health at international, regional and national levels. Georgian delegation, with representation of NCDC took active part in the Ministerial expressing the readiness for the implementation of the Ostrava Declaration commitments.

In order to fulfill the third priority, activities were carried out in different directions during the year.

In line with the Action Plan of the EU-Georgia Association Agenda: Inter-sectoral work has been conducted and the National Environmental Health Action Plan (NEHAP) was drafted and passports of four environmental health indicators that prior had been adapted to the local conditions, were worked out for the Integrated Information System - SEIS.

Ongoing EU Twinning Project GE 22 “Institutional Strengthening of Environmental Health System in Georgia” is implementing for two years by the consortium of Italy, Poland and Great Britain. Three meetings of the coordination management committee were held during the year. Major gaps have been identified and recommendations prepared. Works are on



**Kick-off conference for the twinning project:
Institutional Strengthening of Environmental
Health System**

the way for the implementation of the other actions in accordance with the project plan.

In order to raise public awareness and increase education level towards environmental risk factors impact on human health, environmental health related material was prepared and uploaded on the web page of NCDC. Information campaigns were conducted on the impact of environmental pollution on human health, promoted and advocated walking and biking. In 2017, the joint project of the Ministry of Labour, Health and Social Affairs and the Ministry of Environment and Natural Resources was completed with the support of WHO Environment and Health Office in Bonn (Germany) and Federal Agency for Environmental Protection of Germany (UBA).

“Development of Legislative and Operational Framework for Collection and Sharing of Information on Hazardous Chemicals in Georgia” Within the project the structure of collection and sharing of information on hazardous chemical substances has been

developed, as well as the demo version of the registry electronic model of hazardous chemical substances and the needs of stakeholders were determined. Draft legislative amendments have been prepared for the introduction of the registry. In addition, the 1st Georgian-language Glossary of Terms on Chemical Safety was prepared. Under the coordination of the NCDC, Georgia participated in the Global Analysis and Assessment of Drinking Water and Sanitation - GLAAS 2016/2017.

Challenges

- Development of data collection procedures and methodology for environmental risk factors' impact assessment on human health
- Enhancement of laboratory capacity and performance for environmental quality assessment



Development of Applied and Fundamental Biomedical and Biotechnology Research

The fourth priority of NCDC is development of applied and fundamental biomedical and biotechnology scientific research. Science and research are an important source of

Key Achievements

- Introduction of GHOST technology for improved surveillance on hepatitis C
- Installation of Magpix, Luminex equipment and introduction of CCHF/Hanta detection assay
- Application of MAT assay for *Leptospira* detection
- Implementation of several methods for detection of AMR genes
- Genotyping of Measles/Rubella, Rotavirus and Influenza viruses with sanger sequencing
- Upload of Georgian origin *B. anthracis* and *Brucella* genomes into NCBI database
- Sequencing of CCHF whole S segment
- Whole genome sequencing of plant pathogen *Ralstonia solanacearum* strains isolated in Georgia
- Finding of new active foci of anthrax in 18 villages of Kvemo Kartli
- After study of anthrax ecology in border regions with Azerbaijan, increase of active foci compare to previous years was detected
- Study of seroprevalence of zoonotic diseases in animals and finding short time efficiency of anthrax vaccine
- First time research of anthrax distribution risk factors and analysis using GARP modeling and study of activity of anthrax foci by soil types
- Publications in "The Lancet"

strategic information for NCDC. Prepared recommendations first of all are aimed to maintain and improve public health and on the other hand to form the state policy and decision-making process based on evidence, obtained from modern scientific methodologies.

Research projects are carried out constantly at NCDC. Should be noted that in order to improve this direction, the Richard Lugar Center for Public Health Research utilizes with modern level equipped BSL-2 and BSL-3 laboratories. The center has Next Generation Sequencing equipment that provides a unique opportunity for genome research.

The main research outcomes in the Center for 2017 are:

- In collaboration with UK scientists sequencing of CCHF whole S segment from the PCR positive human was performed using Illumina MiSeq platform. Close relationship of CCHFV circulating in Georgia with isolates from Turkey was found;
- Hantavirus molecular detection methodology was implemented;
- Cultures of *Shigella sonnei*, *Shigella boydii*, *Shigella flexneri* and *Salmonella* spp isolated from different regions of Georgia (Adjara, Kartli, Imereti, and Tbilisi) were studied by Pulse Field Gel Electrophoresis (PFGE) genotyping method. The genome profile of 65 strains

of *Shigella spp* have been added to the database, there are 11 genetically different new profiles among them;

- Creation of regional laboratory of Global Hepatitis Outbreak and Surveillance Technology (GHOST) has started;
- Elisa positive rotavirus samples were genotyped by sequence method and the genotypes of rotavirus circulating in the country were identified: G9/P6, G2/P4, G1/P8, G9/P4, G2/P8, G4/P8, and G9/P8. Also sequencing of Rubella virus was done and obtained the genotype D8 circulating in the country;
- MLVA typing of *B. anthracis* cultures was carried out. Based on obtained data the dendrogram was constructed, where identified two different clusters. Four Georgian SNP groups were identified based on SNP typing; A. Br 027/028, A. Br 028/029, A. Br 029/030 and A. Br 030/031;
- The selected strains of *Y. pestis*, *B. anthracis*, *Brucella spp.*, and *F.tularensis* whole genomes were sequenced on Illumina MiSeq (Lugar center) and PacBio (Los Alamos National Laboratory) platforms;
- With support of the Bundeswehr Institute of Microbiology Leptospira antibody detection using microagglutination (MAT) method was implemented. Collection of Leptospira with 14 standart strains was updated;
- Whole genome analyses and genetic characterization was conducted on *Ralstonia solanacearum* isolated from the different regions of Georgia. Phylogenetic analysis of individual genes have been

identified similarity between Uruguay and Georgian strains;

- The first time in Georgia clinical epidemics surveillance system of Carbapenem-resistant Enterobacteriaceae (CRE) was implemented and all data are recorded in to database. The existence of carbapenase resistant genes such as OXA, BIC, NDM, KPC, VIM circulation was confirmed;
- The new foci of *B. anthracis* have been found in 18 villages of Kvemo Kartli with total of 33 active foci. Study of seroprevalance of the diseases showed the short-lived period of effectiveness of anti-infectious vaccination (6 months), which creates a basis for making changes in vaccination campaign planning in animals. A phenotypic and genotypic study was conducted on the strains from the border region with Azerbaijan;
- Analyses using GARP modeling to study risk factors of *B. anthracis* and active focus based on soil type was conducted the first time.

The center also conducted applied researches:

- Qualitative research has been conducted for the successful implementation of the HPV vaccine, which aimed at studying general attitudes towards immunization and worries and panic associated with vaccine safety in the population. Based on the results of the research, a communication strategic plan for the introduction of HPV vaccination for 2017-2019 was developed for the prevention of the spread of incorrect information and other possible

complications in the implementation of a new vaccine;

- Results of Disease Risk Factors STEPS 2017: Tobacco - the number of current users has increased; the average age of new smokers has decreased among daily smokers; Average number of cigarette industrial production per day is increased in daily smokers. The average number of smoked cigarettes per day has increased among daily smokers. Research innovation - for the first time, urine cotinine tests revealed real women smoking prevalence - 12.2% (7.1% - with the questionnaire); To reduce the risk of smoking: consultation at primary health care - 11.0%, electronic cigarette - 9.4%; Nicotine replacement therapy - 0.3%; Medicament (Tabex, Bupropion) Therapy - 0.4%; None of them has been contacted for telephone consultation. Alcohol - alcohol consumption has increased during a lifetime and within the last 30 days of life; reduced consumption and alcohol consumers over the past 12 months - 13.4% less men and 7.4% less women use alcohol;
- The "Knowledge, Attitude, Practice" (KAP) study of flu vaccination was conducted. The aim of the research was to understand the process of planning of the vaccination season for physicians and pregnant women (as high-risk groups) from their practical experience. The study showed that the level of knowledge for flu vaccination is low in both the population and the medical personnel;

- The Global Tobacco Survey (GYTS) was carried among youth with participation of 1,345 school students aged 13 to 15, which showed that tobacco and cigarette consumption have a growing tendency;
- The results of the study "Assessment of Knowledge, Attitudes and Practices in Prevention and Control of Non-Communicable Diseases in Primary Health Care in Tbilisi and Kakheti" showed, that a certain part of health care providers do not have sufficient knowledge and experience to effectively counsel patients. Consultations on lifestyle changes, including the rejection of tobacco smoking, increased physical activity, prevention of alcohol abuse and weight control, should include the systematic and targeted use of information and methods to support individual behavioral changes; The results of the study underscore the need for effective intervention between family/rural physicians to ensure their active involvement in preventive measures against non-communicable diseases. In order to improve the prevention and treatment of NCDs at the primary health care level, WHO recommends the introduction of "Package of Essential NCD Interventions";
- A retrospective and descriptive study of maternal death cases was conducted based on the principles of active monitoring of maternal mortality. Factors related to the availability of medical services, socio-economic and behavioral determinants

were studied, and 24 possible cases of maternal mortality were analyzed;

- WHO, UNICEF and regional public health centers conducted National Iodine Survey in Georgia and Study of Children's Obesity Surveillance Initiative, which has confirmed the effectiveness of universal iodizing program in the country and elimination of iodine deficiency;
- Together with CDC study was conducted to "Identify and characterize hepatocellular carcinoma, associated with C hepatitis in patients with diagnosis of cancer in liver and biliary system in 2015-2016";
- The studies "Knowledge, Attitude, Practice" of medical personnel and senior people in vaccination, health-related behavior among children of school age (HBSC), strengthening of micronutrients deficiency surveillance systems;
- Research on early marriages was conducted.

The 17 employees of the NCDC were working on researches to obtain a doctoral degree. The dissertation work "Molecular-genetic study of *Br. melitensis* strains separated in the territory of Georgia" was awarded with PhD degree.

The specialists of the Center published 143 different kinds of material: 23 scientific articles, 57 abstracts/posters, 55 educational and 8 epid bulletins. Two articles were published in the journal "The Lancet": 1. Healthcare Access and Quality Index based on mortality from causes amenable to personal health care in 195 countries and

Challenges

- Difficulties regarding obtaining new projects
- Development of multidisciplinary research capabilities
- Expanding scientific directions, including direction of "personalized medicine"

territories, 1990-2015: a novel analysis from the Global Burden of Disease Study 2015. Vol. 390, No. 10091, pp. 231-266; 2. Global, regional, and national under-5 mortality, adult mortality, age-specific mortality, and life expectancy, 1970-2016: a systematic analysis for the Global Burden of Disease Study 2016. Vol. 390, No. 10100, pp. 1084-1150.

During the reporting period, 119 employees of the NCDC participated in 49 different events and presented 30 oral reports. The Center's 133 specialists participated in 77 workshops and 39 seminars during the year.

The staff member of the Center received an appreciation for the contribution made in the development of the WHO guideline "The Intermediate Practical Guideline for Introduction of Primary Components of Infection Prevention and Control at the National Level".

At the 1st German Symposium on Bacteriophage in Stuttgart (9-11 October, 2017), the staff member of NCDC participated with an honorable guest status.

Activities for Implementing Objectives to Achieve Priorities

In order to fulfill activities according to the 4 key priorities, five core objectives were defined. Each of them are interrelated and closely linked to one another:

- Producing reliable information through the monitoring, assessment and analysis of the health condition of the population and environmental factors
- Strengthening disease and public health risk prevention, surveillance, preparedness and response system
- Promoting population health
- Developing of public health and bio-medical research for evidence-based public health policy
- Developing and maintenance of institutional capacities

Key Achievements

- Constant improvement of the quantitative and qualitative indicators of the “Birth Registry”
- Improved identification of the underlying causes of death by involving the district public health centers by conducting verbal autopsies of ill-defined cases
- Published analyzed data for three years from the Population cancer registry and Statistical Yearbook "Health Care in Georgia, 2016"
- Published "Georgia Profile of Health and Well-being" and "Georgia Highlights on Health and Well-being" by the WHO Regional Office of Europe”, prepared for the World Health Organization series
- Published articles in the "The Lancet"

To achieve each objective, the relevant goals were set.

As a result of coordinated work of all its structural units, NCDC is performing these objectives and goals in daily activities for the fastest and sustainable achievement of priorities.

Information and technologies. Production of medical statistics

Production of statistics, data analysis and presentation: Reporting was organized according the paper-based forms (14 yearly, 2 quartely, 4 monthly) and 3 electronic modules.

Data in the WHO’s “Health for All” and “Resources in Health” databases were updated. Periodic workshops and consultations of people were conducted for the health facilities managers, responsible employees for statistics at the facility level, were conducted.

Birth/Death registration: Since 2017, a medical component of birth/death registration system has been administered by the NCDC. Several actions aimed to the improvement of the quality of data (verbal autopsy to detect causes of death) were implemented. 63 public health centers are participating in the verbal autopsy conducting and medical records reviewing. During the reporting period data controlling, monitoring, communicating with customers and their counseling were conducted.

Cooperation with the Washington University's Institute for Health Metrics and Evaluation (IHME): Various databases were provided to the Institute for Health Metrics and Evaluation, in the frame of the bilateral memorandum. In 2017, two articles were published in the "The Lancet" magazine with the co-authorship of the NCDC staff.

Participation in the European Health Information Initiative (EHII): Georgia is a member of the European Health Information Initiative (EHII). The EHII contributes to international cooperation in sharing of experience, increasing the possibilities, and harmonizing of data collection and reporting. The NCDC is actively involved in regular online meetings of the steering committee.

Health classifications maintaining: consultations of customers for classifications were conducted.

Following the request of the narcological services, a clinical sub-classification was added to the International Statistical Classification of Diseases

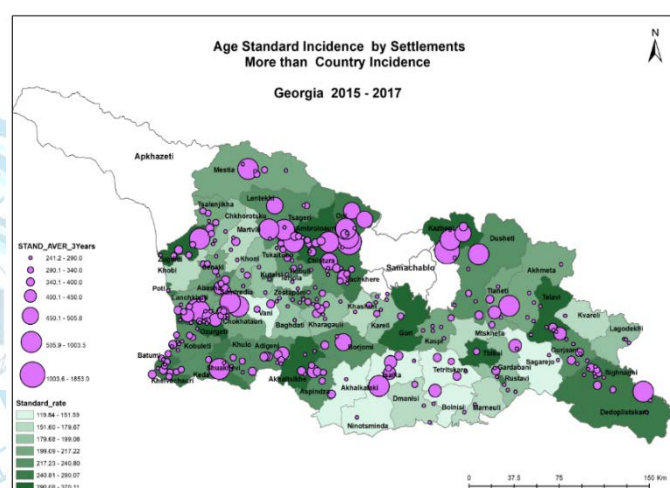
Publications: Statistical yearbook "Health in Georgia, 2016, statistical highlights "Health Care 2017" and "Incidence of malignant neoplasms in Georgia, 2015-2016" (in Georgian and English languages) were prepared and published).

Two publications "Georgia Profile of Health and Well-being" and "Georgia Highlights on Health and Well-being" were prepared for the World Health Organization series, which

were published by the WHO Regional Office of Europe.

Registries

Population Cancer registry organizes a systematic collection, storage, analysis, interpretation, and presentation of cancer data and plays an important role in the providing quality, consistent and precise data. In 2017, 200 medical facilities, including 26 labs, were involved in the reporting system, 17 604 individual forms were received. Continuously were



conducted the following activities: consultations of the personnel, involved in the cancer registration, correction of the reporting forms, and software support. Analysis of the data, collected by the Cancer Registry in 2015-2017, was published in Georgian and English languages.

"Pregnant women and newborn health surveillance electronic module" (i.e. "Birth Registry"), contributed to the continuous monitoring through the supervision of antenatal and obstetrical services, Carried out from the first antenatal visit till the discharge after delivery.

Birth Registry

Home

Analytics

Dashboards

Categories

Reports

Logics

Facility Levels

Statistics

Help

Confirmation

The project is being implemented by the National Center for Disease Control and Public Health of Georgia with technical and financial support of United Nations Children's Fund (UNICEF)

Current Past Children History

Save

Cancel

Mother

Custodian

Father

Health Related Info

Visits

Hospitalizations

Delivery/Abortion

Newborn

Week of pregnancy (at the time of registration)

Number of previous spontaneous abortion

☐ yes ☐ no ☐ Unknown

If you have given birth before did you ever have a CS

☐ yes ☐ no ☐ Unknown

Number of previous induced abortion

☐ yes ☐ no ☐ Unknown

Number of pregnancy

☐ known ☐ Unknown

Pregnancy registration date

Chronic/Genetic Diseases

ICD10

Code	GeoName
მონაცემები არ მოიძებნა	

Past Surgeries and Diseases

NCSP

Code	GeoName
მონაცემები არ მოიძებნა	

Supplements/Alcohol/Drugs

Supplements before pregnancy

Multivitamins

☐ yes ☐ no ☐ Unknown

Folic acid

☐ yes ☐ no ☐ Unknown

Supplements during pregnancy

Multivitamins

☐ yes ☐ no ☐ Unknown

Folic acid

☐ yes ☐ no ☐ Unknown

General Information

Blood Group

Allergies

☐ yes ☐ no ☐ Unknown

Blood Transfusions

☐ yes ☐ no ☐ Unknown

Evidence of parents RH conflict

☐ yes ☐ no ☐ Unknown

STI

☐ yes ☐ no ☐ Unknown

HIV

☐ yes ☐ no ☐ Unknown

State financing

“Birth Registry” interface

Additionally, the system records data about the newborn's health. The registry is one of the most important tool for improving the quality of perinatal regionalization process. Across the country, 367 health facilities, providing perinatal services had access to the e-module. Data entry, monitoring, communication with providers and consumers' trainings were conducted during the reporting period. In 2017 were registered

52 578 deliveries, the number of live births – 53 318. Quantitative and qualitative control, and monitoring of qualitative indicators (associated with maternal and newborns' mortality/morbidity) were conducted continuously. Some indicators of perinatal services are generated by the system automatically helping the process of regionalization.

Maternal and child health and mortality:

comparison of the MoLHSA data and medical statistics was executed (stillbirths, maternal and under-5 mortality). Collaboration in the field of maternal and child mortality with UNIGME and UNMMEIG continued. A refinement of maternal and child mortalities indicators at the international level was the aim of the collaboration.

Information systems development

Key Achievements

- Switching the center to the unified hotline 116 001
- Introduction of the 3CX video conferencing system
- Transition to the new e-mail system
- Introduction of the users' management unified electronic system
- Development and implementation of a multi-functional SMS engine
- Development of AIDS prevention system
- Updating of the center's web site
- Updating of the GIS license

In 2017, special attention was devoted to the development of information systems. The NCDC has undertaken administration of various important health information systems from the Social Service Agency. Also, in parallel, different new information systems were created.

Transition of the center to a digital unified telephone hotline was important. In order to

improve the service, conversations are recorded and users are informed about it. Due to make various technical decisions, different types of statistics are produced through the renewed system.

NCDC has transitioned to the 3CX video conferencing system, through which the real time (LIVE mode) is communicated with the center's regional services and public health centers.

The NCDC e-mail system was updated, major steps were taken for creation, development and implementation of a unified warehouse system.

Through multifunctional SMS engine, notifications were sent to the population of Georgia for participation in the screening and treatment of hepatitis C.

Challenges

- Transfer and digitalization of paper-based reporting forms into electronic formats
- Human and financial resources mobilization for the development of information systems
- Development of thematic registries
- Inclusion of citizens into e-health
- Improvement the electronic system for immunization, increasing its awareness and effectiveness
- Introduction of the logistic module
- Introduction of the unified laboratory information system
- Development of a registry of chemical substances and setting up a single-window system for disinfection solutions
- Establishing a registry of employed medical personnel and conducting different analytics around it

The “Birth Registry” was updated, validations and analytical engine were added. This will improve the quality of the information and promote its use for the relevant policy. After transition of the birth and death registration system to the NCDC, the system was improved.

With donors assistance works have been done for the development of the integrated information system for laboratory, system for surveillance of children under-5, and analytical engine for hepatitis C; development of the electronic version of the unified Cancer Registry was planned.



Visiting the Cancer Registry Office in Oslo (Norway)
to study the best practice and share experience



Management and Coordination of Regional Public Health Divisions

To achieve the goals and objectives, as well as to fulfill the functions of public health, a significant role is assigned to proper coordination and methodical management of the activities of local municipal public health centers, which is carried out by the Regional

Key Achievements

- Hosting WHO public health experts group evaluation mission
- Participation in the 1st and 2nd Coalition of Partners Experts Meetings (Copenhagen and Helsinki)
- Study Visit of the MoLHSA and NCDC representatives to the UK, organized by the WHO Regional Office for Europe, WHO Collaboration Center, the Public Health England
- Elaboration of National Recommendation (Guideline) for municipal public health centers
- Elaboration of the list of municipal programs based on the needs of the local population.
- Equipment of Bacteriological Laboratory of Imereti Division with a modern BACTEC FX40 blood culture system
- Involvement of all regional municipal public health centers in the implementation of screening
- Engagement of municipal public health centers in NCDs studies
- Rehabilitation of Training Center of PH Imereti Division
- Expansion of the commercial research lab services



Meeting to discuss the ways of improvement of influenza and other communicable disease surveillance in Adjara region

Public Health Management Department and its regional structural units.

In 2017 the Department has been coordinating activities of the regional facilities (laboratories) and municipal public health centers using electronic monitoring system as well as regular working visits, target trainings and mentoring, communication with self-governing bodies, other institutions of the system and international partner organizations.

During the reporting period, the NCDC hosted WHO public health experts group evaluation mission. Purpose of the meeting was to assess the capacities of public health system in Georgia, identify the priorities for future reform of the system and to support development of public health action plan.

During the year, the following activities were carried out:

- Monitoring through regional audits by regional units and divisions of the state programs' implementation by the municipal centers;
- The laboratory network carried out active epidemiological surveillance on

a monthly basis; was involved in the implementation of laboratory component of state programs and in laboratory surveillance of especially dangerous diseases;

- In order to increase immunization coverage, the regional laboratory network conducted an active surveillance on the provisions of "cold chain" requirements on monthly basis, and raising knowledge and skills of responsible officials on immunization;
- Department actively participated in educational and communication activities, educational campaigns on non-communicable (harmful effects of smoking, hypertension, disorders caused by environmental harm and other risks), and communicable diseases;
- Participated in educational and communication activities dedicated to the World TB Day, Immunization Week, World Remembrance Day of *AIDS Victims*, World Mental Health Day, etc. and in the meetings dedicated to international cooperation

Challenges

- Improving the legislative environment for the public health effective management
- Harmonizing Public Health hygienic norms, standards, guidelines, with the EU and other international standards
- Increasing coordination role of public health specialists in solving local healthcare problems
- Integrating public health programs in the primary healthcare programs and preventive measures in universal healthcare and private insurance packages
- Rising political support for public health programs in municipalities and increasing competencies of local governments in solving public health problems
- Improper competences and skills of local professional staff
- Lack of funding from local budgets, low motivation and remuneration, staff turnover and their retention

on epidemics surveillance, including the meetings arranged in the frame of transborder cooperation.



Meeting for improvement disease early detection in Samegrelo-Zemo Svaneti region

Quality Control

Quality Control is responsible for the development, implementation, support and continuous improvement of rules, standards and documents related to the quality management system implementation. Active working process for international accreditation of Lugar Center General Bacteriology and Serology Laboratories, started in 2015, has been successfully finished

Key Achievements

- Implementation and fulfillment of External Quality Control program EQA/UKNEQAS on a monthly basis
- International ISO 15189 accreditation of General Bacteriology and Serology laboratories
- Implementation of Personnel competency assessment practice
- Creation, approval and implementation of more than 300 documents for quality management

in 2017 and above mentioned laboratories have been accredited by American National Accreditation Board (ANAB/ANSI) with ISO 15189. Financial support was provided by the USA Defence Threat Reduction Agency (DTRA) and USA Centers for Disease Control and Prevention (CDC).

Activities carried out in 2017:

- Developed, approved and implemented Lugar Center Quality Manual and other related documents;
- Renewed and updated Quality Committee members' list;



- Developed and implemented plan for Risk Prevention;
- In order to assess the personnel competency performance, evaluation has been fulfilled and training plan elaborated;
- Trainings were conducted to improve personnel competency;
- External Quality Assurance program provided and performance evaluation assessed;
- Updated, approved and implemented Internal Audit annual plan. Internal audits conducted, corrective actions fulfilled and assessed CAPA effectiveness;
- Conducted simulated and real audits. Corrective actions conducted based on the findings of the assessors from accreditation body.

Challenges

- Maintaining quality and support its continuous improvement
- Ensuring sufficient improvement measures on Internal and External Audit reports and recommendations
- Lack of staff with professional experience on quality management
- Financial support to maintain accreditation and extend the scope of accreditation

Partnership with Local and International Organizations

One of the main priority of the NCDC during 2017 was collaboration with local and international governmental, non-governmental and private organizations and institutions. The key strategic partners are: World Health Organization (WHO); US Department of Health and Human Services (DHHS) and Centers for Disease Control (CDC); Global Fund to Fight AIDS, Tuberculosis and Malaria (GFTAM); Defense Treat Reduction Agency of the US

Key Achievements

- Georgia's 1st time election to the WHO Executive Board for 2017-2020
- Georgia's 1st time election to chair the Standing committee of WHO Regional Committee for Europe (SCRC) for 2017-2018
- 1st time holding the SCRC session in Georgia
- Participation in an European Health Systems Foresight Group's 1st meeting
- Successful implementation of JTA between the Government of Georgia and the Government of the United States of America
- Development LIMS and EIDSS under the support of DTRA to improve epidemiological and laboratory surveillance systems
- Publishing NCDC's an English-language leaflet to increase the international awareness
- U.S. Senator's R. G. Lugar's letter of appreciation to the NCDC's General Director
- Development and distribution of fact sheets on public health priority directions
- Study Visit of representatives of the NCDC to the Kingdom of Norway



Department of Defense (DOD/DTRA); Walter Reed Army Institute of Research (WRAIR); Global Alliance for Vaccines and Immunization (GAVI); Council of European Union (EU); United Nations agencies (UNDP, UNFPA, UNICEF).

Moreover, NCDC receives considerable technical assistance from the US International Development Agency (USAID), US National Institutes of Health (NIH), Public Health England (PHE), Mediterranean Programme for Intervention Epidemiology Training (MediPiet), European Center for Disease Prevention and Control (ECDC), The Bloomberg Initiative to Reduce Tobacco Use – Bloomberg Philanthropies, International Science and Technology center (ISTC), Science and Technology Center in Ukraine (STCU) and Federal Foreign office of Germany.

In order to develop public health, bio-medical and bio-technological capacities NCDC has partnership with European and US

as well as local universities, academic circles, scientific research centers etc.

Colaboration with World Health Organization:

Georgia is a member of the 25th Standing Committee of the WHO Regional Committee for Europe (SCRC) for 2015-2018 term, which represents a subcommittee and an advisory body to the Regional Committee and comprises representatives of 12 countries, with each member elected by the Regional Committee to serve for 3 years.

In 2017, the first time Georgia was elected to chair the Standing Committee for 2017-2018. In addition, in 28-29 November, 2017, SCRC session was held the first time in Georgia, which was attended by Dr Zsuzsanna Jakab, WHO Regional Director for Europe, together with all directors of the regional office and the SCRC members and advisers from 12 SCRC member countries.

In the frames of the visit, “Biennial Collaborative Agreement between the Ministry of Labour, Health and Social Affairs of Georgia and the Regional Office for Europe of the World Health Organization” for 2018-2019 was signed, which defines field of technical cooperation on the following programmatic directions:

- Communicable diseases: hepatitis, TB, vaccine preventable diseases, antimicrobial resistance;
- Non-communicable diseases: population based preventive mechanisms and tobacco control;
- Reproductive, mother, newborn, child and adolescent health and environmental health;
- Health systems strengthening.

WHO experts mission meeting was held in the NCDC on the public health issues, the aim of which was to assess the functional capacities of Georgia’s public health system and services provided within, defining the priority directions of its future reformation and to assist Georgia in developing the Public Health Plan of Actions.

Director General became a WHO’s European Health Systems Foresight Group member and participated in its 1st meeting, held in Brussels.

Collaboration with the U.S. Donor Organizations (DTRA, CDC, WRAIR)

In the framework of the collaboration between the NCDC and the U.S. Defense Threat Reduction Agency (DTRA) it was successfully implemented the agreement between the Government of the United States of America and the Government of



SCRS session,
Tbilisi





Admiral Scott Jerabek and DTRA representatives
visiting the R. Lugar Center for Public Health Research

Georgia concerning the transition of sustainment costs and responsibilities over the unified laboratory system for detection, epidemiological surveillance and response to especially dangerous pathogens, and the Richard G. Lugar Center for Public Health Research in Georgia.

The documentation was prepared for the U.S. Vice President's visit in Georgia, referring the achievements of collaboration with partner and donor organizations and plans for future extension of relations in compliance with the Center's priorities..

The NCDC participated in the anniversary event dedicated to the 25 year diplomatic relations between Georgia and the United States of America.

During reporting period at meetings and teleconferences, carried out between the Center's and DTRA's leadership, a number of issues, results and challenges were discussed. They were also followed up with a consent to strengthen the Center's priority directions.

Through the DTRA's support the LIMS was initiated as well as elaboration of the new version: 7.0 of EIDSS started.

DTRA's Deputy Director's visit in Georgia

was given high appraisal from the U.S. high-rank visitors.

The visit confirmed the productive functioning of the NCDC.

Through the CDC's support a number of surveillance and research projects were implemented.

During the visit of the Director of Division of Global Health Protection of CDC, the milestones of collaboration with CDC were discussed in detail, that ended with positive assessment from CDC.

In collaboration with WRAIR two extended working meetings with the Lugar Center's scientists were carried out; joint scientific research studies were implemented.

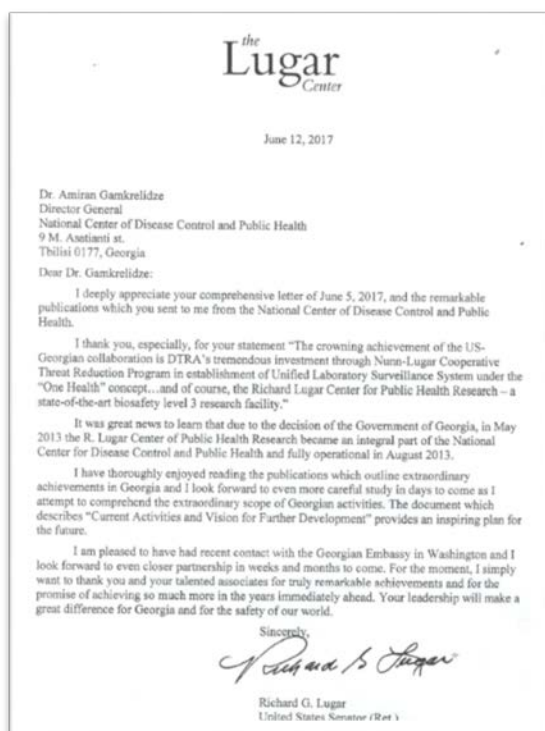
The Lugar Center hosted several high-rank



Nancy Knight (Director of the Division of Global Health Protection, CDC) visiting the R. Lugar Center
for Public Health Research

officials, including the visit of Deputy Assistant Secretary for Nonproliferation Programs in the State Department's Bureau of International Security and Nonproliferation and the visit of Deputy Chief of Mission of the U.S. Embassy to Georgia.

The NCDC Director General received a letter of appreciation from the U.S. Senator - Richard G. Lugar for the Lugar Center's successful functioning and scientific achievements.



**Letter of appreciation from the U.S. Senator
Richard G. Lugar**

Collaboration with the Arctic University of Norway UiT: Since 2017, the NCDC is involved in the project “Georgian-Norwegian Collaborative in Public Health (GeNoC-PH)”.

The aim is to enhance competencies and share best practice via collaborative activities in public health, improve capacity of population registries and particularly, efficiency and quality of “Birth Registry”, provide epidemiological, descriptive studies in perinatal health in the frame of doctoral researches and empower international collaboration in the field of global health. During the report-covered period, the NCDC participated in the working tour in Norway with the goal to study Norwegian registries, registry epidemiology and biobanks. Meetings included visits to Norwegian Public Health Institute, Oslo’s University Hospital, Cancer Registry head office, Birth Registry

head office in Bergen, the Arctic University of Norway UiT and the Embassy of Georgia in the Royal Kingdom of Norway. In addition, project involved PhD students presented their studies in the field of Maternal & Children Health at the annual conference, provided by the Norwegian Research School of Global Health (Trondheim, Norway). During the year, project participants initiated working seminar with discussing topic - how to develop “Birth Registry” and steps for further improvements.



Meeting in the Norwegian Public Health Institute, Oslo

Other activities carried out in 2017: In collaboration with the British Medical Journal (BMJ), in which the NCDC plays a main role of a coordinator, Georgia was rated as a lead country with the most registered users (1 281) on the platform among other countries in the Region. During reporting period:

- There were held 4 working meetings among BMJ coordination group members, representatives of MoLHSA, DTRA and BMJ. The meetings took place in Georgia (3 meetings) and in Ukraine (1 meeting);



BMJ Coordinating Committee representatives

- Under BMJ auspices, the Road Show for clinical medicine professionals was organized in Tbilisi and Kutaisi;
- 377 modules were translated into Georgian and uploaded in Georgian portal;
- 2 articles from Georgia in clinical medicine were published on BMJ official web-site.

Georgia participated in the annual meeting of International Association of National Public Health Institutes (IANPHI) in Rome, Italy. More than 100 members, partners and representatives of different organizations have attended the event.

World Hepatitis Summit was held in San Paolo, Brazil by joint organization of WHO, World Hepatitis Alliance and Government of Brasil, which was attended by more than 900 delegates from different countries. On the Ministerial panel General Director of NCDC made a brief summary on the progress of hepatitis C elimination program in the country and Georgia has emerged among the leading countries in terms of hepatitis C elimination. At the Summit CDC organized a

special session to the achievements of the hepatitis C elimination program in Georgia. English-language leaflet of the Center was developed and published to increase the international awareness.

NCDC diary for the year 2018 was developed and published, providing important information on health issues, including revised information about international partnership.

Challenges

- Implementing of the activities in accordance to priorities defined by the Biennial Collaborative Agreement between Georgia and WHO for 2018-2019
- Ensuring proper organization of SCRC sessions in the period of Georgia's Chairmanship
- Elaboration of further cooperation mechanism with DTRA
- Strengthening of Scientific Diplomacy
- Improvement of EIDSS 7.0 version functionality
- Finalization of working on LIMS within the timeline and run into the system
- Accreditation of BMJ modules

Administrative Activities

In 2017 NCDC specialists worked on development of various legal acts and documents:

- 10 grant project documentation were developed and submitted for Government's approval;
- 15 draft decrees of the Government of Georgia were developed and submitted for approval;
- 35 registration letters were prepared;
- 16 draft resolutions of the Government of Georgia and 2 draft amendments to the resolutions were developed and submitted for approval;

- 1 draft order and 2 amendments to the orders of the MoLHSA were developed and submitted to the Ministry for approval;
- 105 contracts for laboratory testing were signed;
- 56 contracts for registration of disinfectants were signed and registered;
- 96 contracts for the Center's were signed and registered.

In 2017 NCDC received 139 applications for issuing public information that were completely satisfied. There was no request for modifying public information.

N	Public Institution	Submitted request	Complete	In time	Percent
1	Ministry of Environment and Natural Resources Protection	39	39	39	100%
2	Ministry of Penitentiary and Probation	28	28	28	100%
3	National Center for Disease Control and Public Health	27	27	27	100%
4	Rustavi City Hall	25	25	25	100%
5	Office of the Public Defender	25	25	25	100%
6	Office of the Personal Data Protection Inspector	25	25	25	100%
7	National Center for Educational Quality Enhancement	25	25	25	100%
8	National Intellectual Property Center of Georgia	24	24	24	100%
9	Land Transport Agency	23	23	23	100%
10	Georgian National Agency for Standards and Metrology	23	23	23	100%
11	Georgian Civil Aviation Agency	23	23	23	100%
12	Kutaisi City Hall	23	23	23	100%

In line with the monitoring and survey outcomes of the Institute for Development of Freedom of Information (IDFI), NCDC was successively nominated for the 2nd time as the most accountable and open organization in 2017 amongst other public institutions (<https://idfi.ge/foi-statistics/#!lang=en>).

The following administrative activities, implemented over the year, should be mentioned: NCDC Supervisory Board Meeting; Redirection of calls received on NCDC hotline telephone number through the internal system; Organizational and transportation logistics for hepatitis C screening visits.

NCDC administration realises importance of *human resources development* and establishment of an efficient system for sharing institutional knowledge and experience and its permanent renewal. In this point of view NCDC was actively working on the personal management policy, aiming to ensure human resources management system based on career growth, merit, conscientiousness, political neutrality, impartiality and professional development.

Public information was delivered from the National Center for Disease Control and Public Health on the regular basis. TV, radio, news agencies, print media, internet TV and internet portals were actively involved in this process.

The processed materials were posted on the Center's website (www.ncdc.ge), Facebook and other social networks (YouTube, MyVideo, twitter). During the year were prepared and uploaded/broadcasted: 623 interviews for various TV channels and

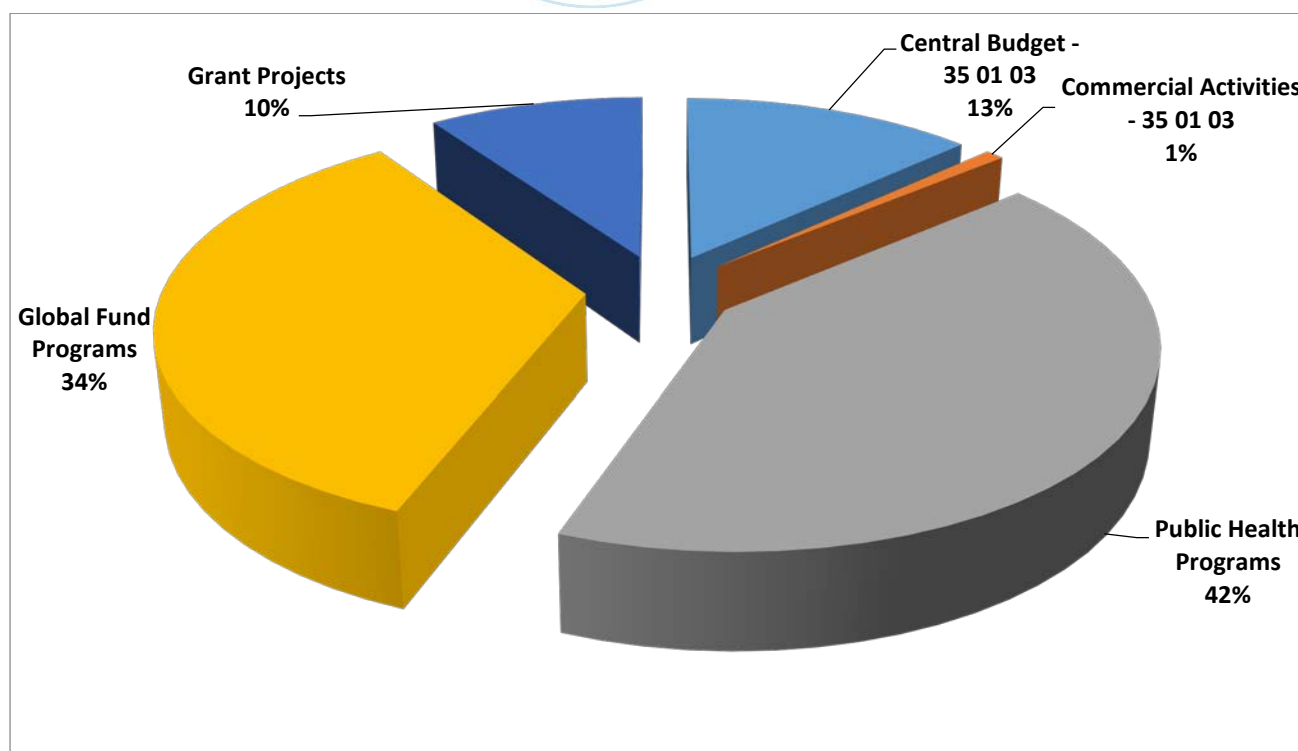
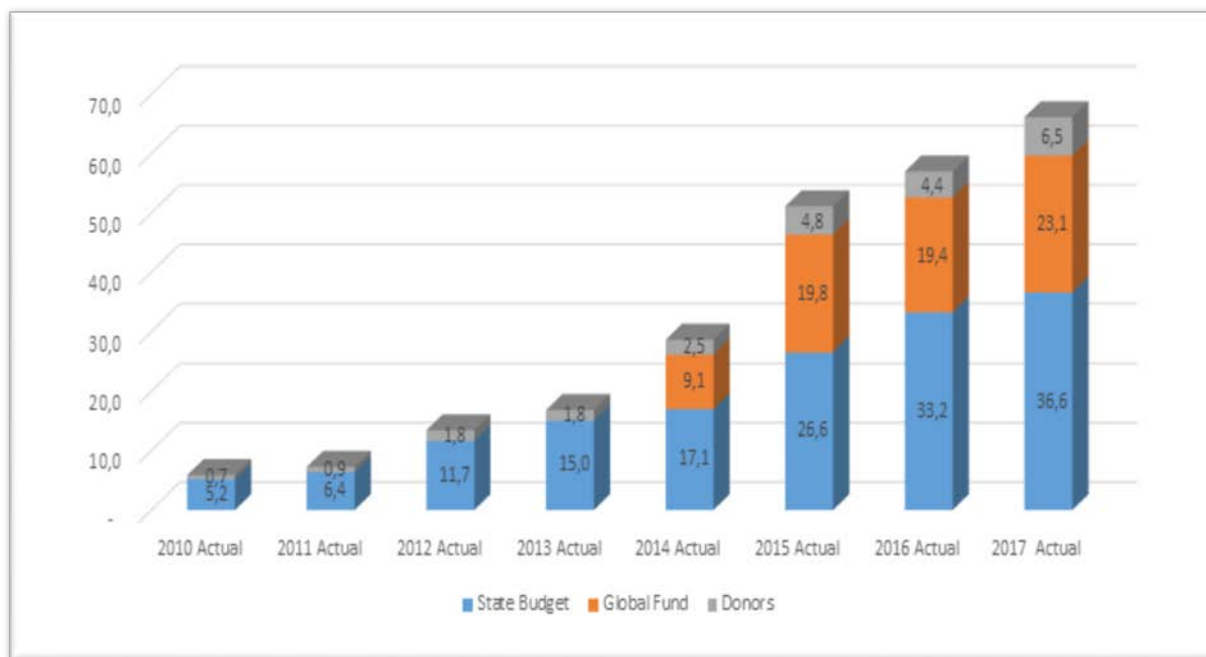


Internet TV; 98 TV programs and 143 TV reports; 14 live broadcasts; 16 press-club visits; 27 radio programs and 34 radio interviews; 224 internet articles and 121 telephone interviews; 53 newspaper articles; 17 press-conferences, 7 briefings; 28 inspection acts, 28 reports; 63 photo sliders; 97 photo albums; informational campaigns on Measles-Rubella-Mumps, Influenza, hepatitis C, HPV Vaccine, Crime-Congo Hemorrhagic Fever, Meningitis, Pneumococcal Vaccine; informational campaigns and relevant press conferences/briefings on “World Days”, Weeks and Information campaigns on actual and thematic issues.

Financial Sustainability of NCDC

Due to increase of functionality of the NCDC the budget allocations from the Central Budget as well as from donor organizations' fundings have been considerably grown, that is pointed in the table (MM. Gel).

By the end of 2017 total value of assets owned and used by the Center amounted to 230 MM. Gel, and implementation of the Consolidated Budget of the Center amounted to 66,2 MM. GEL.

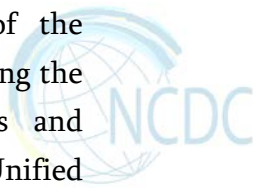


Central Budget Funding

(including 42% of public health state programs and 13% of disease control and epidemiological safety management program (Apparatus))

In 2017 within the state budget allocations the total sum of implementing programs amounted to 36, 6 MM. Gel. State budget funding share on healthcare preventive programs is increasing annually. Some factors should be noted that are reflected in increase of some programs, namely:

- Allocation of “Disease control and epidemiological safety management program” are comparatively increased than last year, to carry out the commitments taken within the agreement “Between the Government of Georgia and the Government of the United States of America Concerning the Transition of Sustainment Costs and Responsibilities over the Unified Laboratory System for Detection, Epidemiological Surveillance and Response to Especially Dangerous Pathogens, and the Richard G. Lugar Center for Public Health Research in Georgia”;
- Allocations are comparatively increased in the “State Immunization Program” that are basically connected with introduction of hexavalent vaccine (DTaP-IPV-Hep B-Hib) prequalified by WHO;
- To fulfill the commitments related to the Global Fund, the budget funding is reflected in gradual take over of its programs: “Sustaining Universal Access to Quality Diagnosis and Treatment of all forms of TB” and “Sustaining and scaling up the existing national responses for implementation of effective HIV/AIDS prevention activities, improving survival rates of people with advanced HIV infection by strengthening treatment and care interventions”

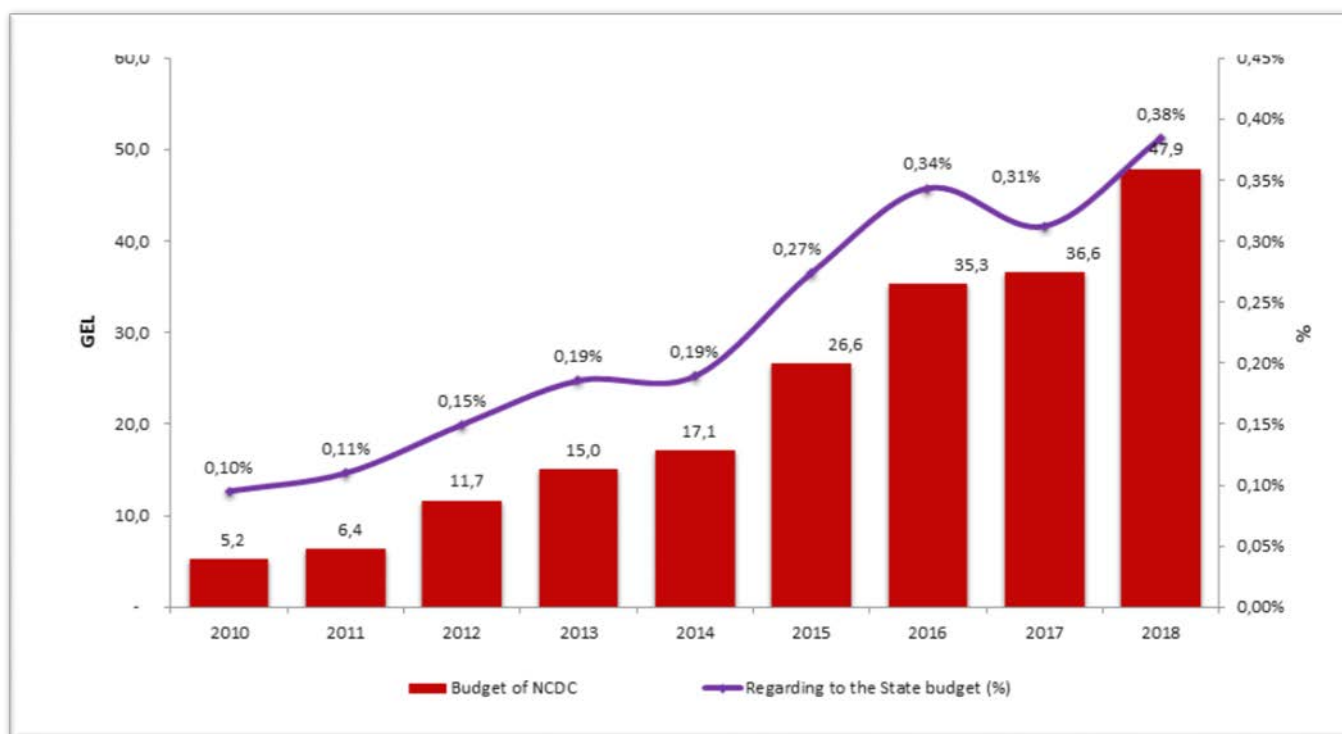


State Funding Allocation Performance According to Programs in 2017

Thousands, GEL

Org.code	Name of Program	Approved Plan 2017	Adjusted Plan 2017	Actual costs 2017	Performance %
Total	State Budget	37 519	36 682	36 593	99.8%
01 01	Disease Control and Epidemiological Safety Management Program - 35 01 03	8 430	8 769	8 753	99.8%
02 00	Public Healthcare	29 089	27 913	27 840	99.7%
02 01	Early Detection and Screening - 35 03 02 01 - 35 03 02 01	1 900	1 427	1 425	99.9%
02 02	Immunization - 35 03 02 02	16 253	17 983	17 927	99.7%
02 03	Surveillance - 35 03 02 03	1 779	1 552	1 552	100.0%
02 04	Safe Blood - 35 03 02 04	1 700	1 554	1 553	100.0%
02 05	Occupational Disease Prevention - 35 03 02 05	270	185	184	99.5%
02 06	Tuberculosis - 35 03 02 07 02	1 366	953	952	99.9%
02 07	Universal coverage of quality diagnostics and treatment for all forms of Tuberculosis - 35 03 02 07 03	1 397	831	826	99.4%
02 08	HIV / AIDS -35 03 02 08 02	1 200	765	763	99.9%
02 09	To prevent HIV / AIDS in Georgia to support national response; to improve life indicators through strengthening of treatment and care measures - 35 03 02 08 03	2 000	1 448	1 447	99.9%
02 10	Maternal and Child Health - 35 03 02 09 02	474	409	408	99.6%
02 11	Health Promotion - 35 03 02 11	200	199	198	99.5%
02 12	Hepatitis C Management - 35 03 02 12	550	608	604	99.4%

Dynamics of Weighted and Allocated Appropriations, Financed from the State Budget



Donor Organizations' Funding

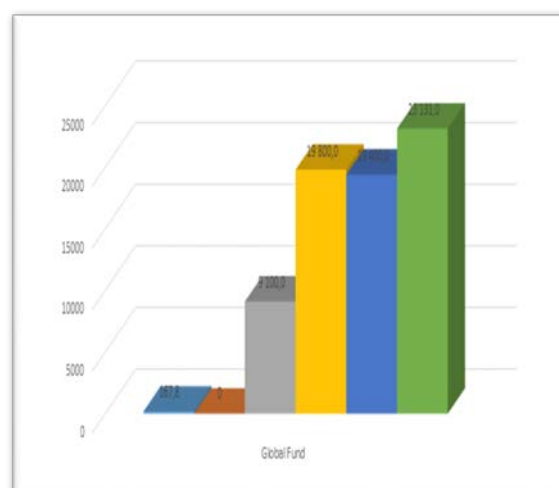
(including 34 % of Global Fund Funding, 10% from other donors from the Center's consolidated budget)

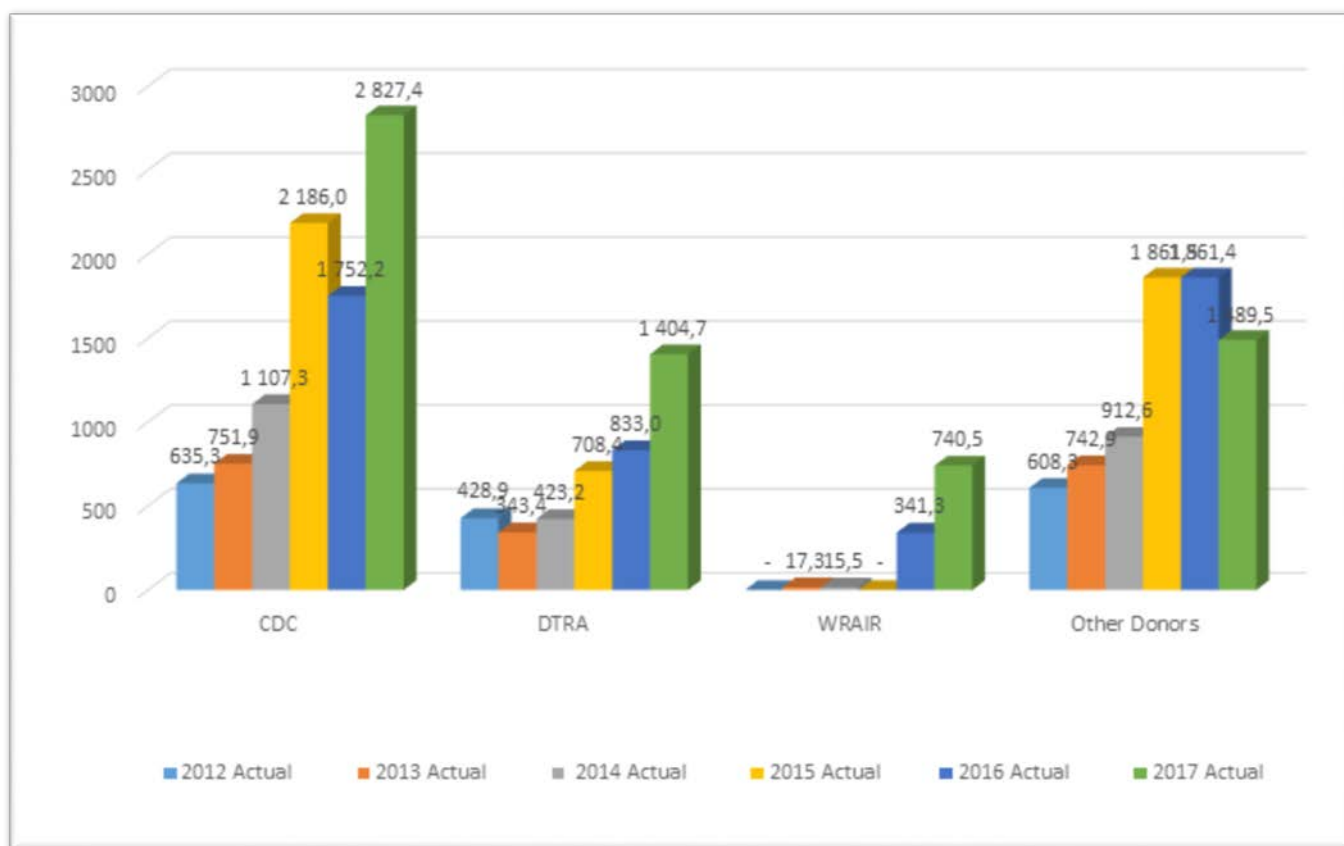
In 2017 the Center managed 72 grant projects funded by 17 donor organizations which total expenses amounted to 29 592 GEL.

Income received from the donor organizations in various currency included:

USD – 11 933 832; EUR – 32 407; GEL – 149 831, through direct payment was reimbursed- GEL 3 929 008.

Dynamics of Spending Within the Donor Organizations Projects for 2012 - 2017 (Thousands GEL)





Commercial Activities

(1% from the Center's consolidated budget)

In the framework of commercial activities the cash revenues amounted to 734 8

thousands GEL which shows 1.2 % increase in comparison with 2016.

In 2017 the major part of commercial revenue were presented by the incomes from commercial lab testing.

Priorities for 2018

The objectives of 2018 were determined by the United Nations Sustainable Development Goals, WHO and MoLHSA Strategies. Challenges distinguished by each structural unit during the past year have been taken into consideration.

Decrease of Morbidity, Disability and Mortality due to Communicable Diseases

- Maintaining of malaria- and poliomyelitis-free status in the country
- Measles outbreak's retention
- Achieving financial sustainability of immunization programs
- Improving infrastructure needed for the "cold chain" functioning (equipment, devices, inventory purchase)
- Supporting hepatitis C elimination cascade
- Establishing a reference center for laboratory testing of HCV
- Expanding the coverage with hepatitis C screening and removing the financial barrier on the confirmative testing
- Sustaining of routine and sentinel site surveillance systems
- Strengthening the new generation sequencing in the direction of the human genome sequencing
- Establishing One Health unit - modifying the supervision system
- Implementing national EQA program
- Developing of SOPs according to ISO requirements and work standardization
- Maintaining ISO 15189 accreditation and enhance with automated methods.

- Making functional of accredited biosafety training center
- Making LIMS fully functional
- Elaborating of working frame of emergency response program
- Laboratory permanent readiness for bacteriological study of samples obtained in suspicious cases caused by especially dangerous pathogens
- Preparedness of response groups for suspicious cases of especially dangerous infections
- Preparing of South Caucasus atlas for zoonotic diseases
- Laboratory investigation of campylobacter through One Health approach
- Reaching 50% of the unpaid donations in the total amount of blood donation
- Gradual implementation of the commitments transitioned from the Global Fund

Programs supported by the Global Fund to Fight AIDS, TB and Malaria in Georgia

- Revising HIV/AIDS Prevention and Control National Strategy for 2019-2022 years
- The most efficient use of existing savings
- Expanding the coverage of population which are under high risk of HIV infection
- Introducing needed amendments to the on-going programs according to the Global Fund sustainability, transition and co-financing policy (STP)

- Continuing and expanding the PrEP-program
- Implementing an innovative pilot program of Methadone replacement therapy mobile program
- Fully functional electronic database of HIV prevention programs
- Conducting MSM Population Size Estimation Study (PSE) and HIV Integrated Biological and Behavioral Surveillance Survey (IBBSS)
- Improving treatment adherence of sensitive and MDR TB patients
- Introducing VOT with support of newly developed application
- Implementing the pilot project in Samegrelo-Zemo Svaneti region: integration of three disease screening at primary care settings
- Implementing the Zero TB Initiative in Adjara
- Rolling-out ECHO-TB project in every regions and use it for treatment adherence specialists consultation
- Educational campaigns for target groups and general population

Decrease of Morbidity, Disability and Mortality due to Non-communicable Diseases

- Improving recording in a EIDSS
- Participating in primary healthcare reform in terms of improving NCD prevention and management
- Improving monitoring of road traffic accidents

- Improving accounting of reproductive age women and 0-5 children deaths in EIDSS system
- Analysing the major challenges for effective interventions for ensuring high quality services for maternal and newborn health
- Universal access to newborn hearing screening
- Calculating the spread, morbidity and mortality rates of different diseases, maternal and child morbidity and mortality indicators, compare them to other countries' indicators, to identify dynamics trends
- Strengthening tobacco control, promoting implementation of new legislative amendments
- Strengthening and continuing education of human resources

Environmental Impact and Behaviour Risk-factors Assessment and Correction for Improving Population Health

- Formalization of the of the National Environmental and Health Action Plan of Georgia and starting implementation
- Performing commitments undertaken by Ostrava Declaration
- Collecting, analyzing and interpreting data on the qualitative status of the environment, identifying trends, developing recommendations and informing the population

Development of the Applied and Fundamental Biomedical and Biotechnological Scientific Research

- Development of applied and fundamental biomedical and biotechnological scientific research potential
- Recruiting, training and developing, and promoting of employees
- Introducing new research methods and methodological approaches

Information and Technologies; Production of Medical Statistics

- Increasing the data quality recorded in the registers
- Fully electronic data collection (including cancer registres and annual reporting forms)
- Developing and implementing the new registers
- Participating in improving the detection quality of death causes
- Regular renewal of existing medical classifiers
- Filling the WHO databases
- Preparing and publishing different publications with registers data analysis
- Further modification of the Immunization Module, making it fully operable and increase its analytical capabilities
- Creating and refining the hepatitis C analytical engine
- Creating a register of chemical substances
- Establishing a register of employed medical personnel

- Continuous work for establishing the Logistic Module and making it functional countrywide
- Further support for the improvement of the blood donor unified base
- Introducing a unified informational system of laboratory
- Changing the existing website of the center to new one and integration of intranet function

Management and Coordination of Public Health Regional Services

- Increasing the level of knowledge and skills of public health leaders to effectively implement changes
- Increasing efficiency and effectiveness of organizing and management of public health services
- Reviewing / improving the legislative environment with co-operation with WHO, governmental bodies, parliament, and international partners
- Establishing modern technologies according to EPHO 1-5 functions to improve the quality of public health activities, in the context of multidisciplinary and multisectoral perspectives, monitoring and evaluating, improving quality

Quality Control

- Increasing the area of ISO 15189 accreditation, involving other laboratories (flu, polio, molecular) in it
- Together with long-term and yearly improvement facilities, review the multi-year strategic plan of quality and

elaborate recommendations, in accordance with the priority set out to maintain accreditation

Administrative Work

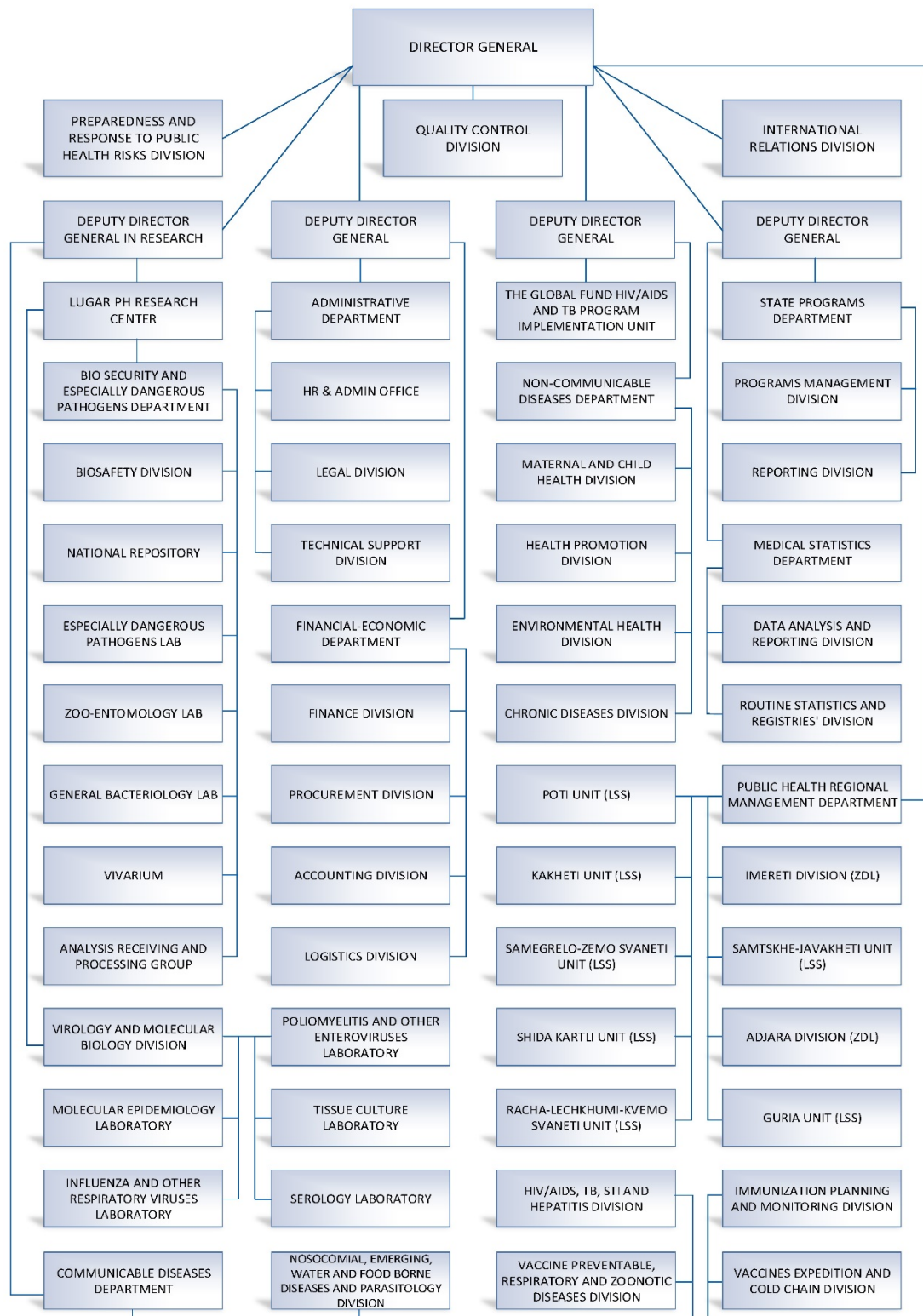
- Elaborating and approving of NCDC's new strategic plan (2018-2022)
- Organizational and technical support for moving to the new administrative

building of the Center and further development of the entire campus

- Increasing the capacities of information technology (including human resources) and upgrade/ enhance technical means
- Functional improvement of the NCDC's hotline (116 001)



Structure of the National Center for Disease Control and Public Health, 2017



Annual Report 2017

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ნაყოფიერებისა და
სქესობრივი ზოგადი
კონტაქტის შესახებ

NCDC

პერიმებალური
ჯანმრთელობის
აპყრეიმი

2019



National Center for Disease Control and Public Health

Address: 9, M. Asatiani, Tbilisi, 0177

Hotline: 116 001

Web site: www.ncdc.ge

E-mail: pr.ncdc@ncdc.ge

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