



LEPL
L. Sakvarelidze National Center
For Disease Control & Public Health

R E P O R T

on

Performance of Work for 2014

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Abbreviations

NCD	Non-communicable Diseases
GAVI	Global Alliance for Immunization and Vaccination
EDPs	Espacially Dangerous Pathogens
EIDSS	Electronic Integrated Disease Surveillance System
NCDC&PH	National Center for Disease Control & Public Health
ZDL	Zonal Diagnostic Laboratory
LSS	Local Sentinel Station
SOP	Standard Operational Procedure
MLHSA	Ministry of Labor, Health and Social Affairs
WHO	World Health Organization
AMR	Antimicrobial Resistance
CCHF	Crimean-Congo Hemorrhagic Fever
CDC	Centers for Disease Control and Prevention
DHHS	Department of Health & Human Services
DTRA	Defense Threat Reduction Agency
ESPAD	European School Survey Project on Alcohol and Other Drugs
GFTAM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GIS	Geographic Information System
IGME	UN Inter-agency Group for Child Mortality Estimation
IHME	Institute for Health Metrics and Evaluation
JTA	Joint Transitional Agreement
NEHAP	National Environment and Health Action Plan
NIH	National Institutes of Health
SEIS	Shared Environmental Information System
STEPs	STEPwise approach to NCD Surveillance
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WRAIR	Walter Reed Army Institute of Research

I. Preface

The National Center for Disease Control & Public Health (NCDC) is the leading agency in the field of public health. The history of the agency began as back as in 1937 – from the date when the Plague Station was established. After restoration of the independence of Georgia, in 1992, the Georgian Plague Control Station was transformed into the Research Center for Extremely Dangerous Diseases, and after the reforms carried out in the sanitary and epidemiological system in 1995 this Center was established with the status of the National Center for Disease Control. In 2003-2007, the Center underwent a large-scale reorganization, which ended up in assuming functions of the Medical Statistics Center and the Public Health Department. In 2013, a full functional integration of Richard Lugar Center for Public Health Research into the NCDC&PH was implemented.

The NCDC, as a Legal Entity under Public Law, is accountable to the Ministry of Labor, Health and Social Affairs of Georgia (MLHSA) and is financed with the budgetary allocations available in the State Budget for it. The Center is a leading agency in the prevention and control of communicable and non-communicable diseases at national level. The Center establishes national standards, guidelines, contributes to the improvement of the public health, carries out epidemiological surveillance, immunization program, laboratory works, and research, provides consultations and responds to the public health-related emergency situations. The NCDC maintains the health care statistics to facilitate the process of monitoring of the population's health status and elaboration of a relevant policy. Since 2013, the Center has been a basic recipient of GFTAM grants. Since 2014, the Center has been implementing the two most important GFTAM programs related to Tuberculosis and HIV/AIDS.

The NCDC mission is to protect the health of Georgian population and improve the disease prevention through its readiness for public health risks and timely response to them based on scientific evidence.

According to the Strategic Development Plan 2013-2017, the NCDC has set four strategic priorities:

- Reduction of morbidity, disability and mortality caused by the Communicable Diseases;
- Reduction of morbidity, disability and mortality caused by the Non-communicable Diseases;
- Assessment and correction of environmental hazards and behavioral risk-factors for the improvement of health of population;
- Capacity development for applied and basic biomedical and biotechnology research.

II. Summary: Main Achievements and challenges in 2014

Main Achievements

- on 5 June 2014, the Joint Transition Agreement (JTA) was signed between the Georgian and US Governments on Transition of Costs and Responsibilities Related to the Provision of the Unified Laboratory System for Detection, Surveillance and Response to Extremely Dangerous Pathogens, and the Richard Lugar Center for Public Health Research, in preparation of which the Center has played an important role. The Document was approved by the Parliament of Georgia on 17 October 2014.
- In 2014, Georgia participated in a new global initiative – Global Health Security program. Out of 11 Action Packages, which consist of three main directions of protection from infectious pathogens: disease Prevention, Detection and Response, Georgia is a leading country in the Real-Time Surveillance action package, and a contributing country – in the National Laboratory System and Zoonotic Disease action packages. The national Center for Disease Control is a base technical institution in this process.
- Georgia, as a leading country in the Real-Time Surveillance action package, is actively working on the establishment of a unified electronic surveillance system in the country, which is based on One Health principle (including both Human and Veterinary sections) and incorporates the Electronic Integrated Disease Surveillance System (EIDSS), Laboratory Information Management system and e-Health system, which is already introduced in the country. Active cooperation in this direction is going on at the regional level as well (Azerbaijan, Armenia, Ukraine, and Kazakhstan).
- For all Lugar Center's laboratories a unified process flow for clinical and environmental samples movement was developed. During a reporting period the entire repository, including EDPs, were moved to the Lugar Center; During the reporting period, 104 strains of causative agents of infectious diseases, including of the EDPs, were registered and frozen (at -80°C) in the National Repository. Among the strains were: *F. Tularensis*, *Br. Melitensis*, *B. Anthracis*. In addition, for each EDP strain in the repository all characteristic data is entered into electronic Pathogen Assets Control System (PACS). First time in the region, at center's repository RFID pilot project for registration of new and repository strains were conducted.
- The following causative agents of infectious diseases, including the EDPs, have been transported to the Lugar Center in a short period of time and properly secured way: 371 cultures of *B. anthracis* – in 940 cryovials; 46 cultures of *Y. pestis* – in 248 cryovials; 102 cultures of *F. tularensis* – in 346 cryovials. Not only the area designated for the repository of the Lugar Center was deployed and used in a short time but also the whole BSL-3 space.
- From patient's clinical sample (a lymph node punctate) suspicious for Cat Scratch Fever, *Bartonella* strains were isolated, which before was never described in scientific literature as pathogenic for humans; First time *Janibacter* spp. was isolated from the heart valve sample (during endocarditis); The first CCHF case was confirmed in West Georgia (Bagdati region) and detection of CCHF vector ticks, *Rhipicephalus sanguineus*, in the country; The first Human Tularemia case was identified in Tbilisi; Existence of a mosquito *Aedes albopictus* was first time confirmed and after decades (60 years) existence of an *Aedes aegypti* was confirmed in West Georgia; First time in Georgia *Ochrobactrum* genus bacteria was described; A novel Orthopox virus species was discovered; First time in Georgia Parapox infection was diagnosed in Humans; Whole Genome Sequencing of 4 Georgian strains of *Brucella* was conducted.
- During the surveillance of infectious diseases, including vectors of especially dangerous infections, group of NCDC entomologists detected a number of mosquito species, which represent transmitters for dangerous viral infections like dengue, chikungunya, yellow fever, hemorrhagic fever. This concludes in a serious risk-factor for the public health.
- The following methods have been introduced in the laboratory practice: Molecular methods for detection of Orthopox and Parapox viruses; Leishmaniasis detection with Nested PCR and Sanger Sequencing of Leishmaniasis causative agent; Filovirus detection PCR, Filovirus Screen RT-PCR, Altona Diagnostics (Ebola, Dengue); RNA sequencing on Next Generation Sequencer; Molecular methods for Mycoplasma contamination detection in Cell cultures; Procedures for optimization and validation PCR diagnostic assay; New cell culture methods; Real-time PCR for Enterovirus detection; Sanger sequencing of CCHF; Sanger sequencing of Leishmaniasis causative parasites; Laboratory diagnostics of viral hemorrhagic fevers have been introduced within Lugar Center's BSL-3 laboratory environment.
- Lugar Center's Serology Laboratory (Measles/Rubella and Rota viruses groups) received 100% score (Measles/Rubella group) and 90% score (Rota viruses group) in proficiency testing; Poliomyelitis and other enteroviruses laboratory successfully completed (100% score) the proficiency testing sent by the WHO.

- The list of various international accreditations/certifications received by the Lugar Center in 2014 and involvement in External Quality Assurance (EQA): Re-accreditation of Influenza, measles/Rubella and Polio laboratories by WHO; participation in WHO European Network's investigation of Rota viruses, AMR, Invasive Meningitis and in External Quality Control (EQA); Involvement in Salmonella Global Network and participation in EQA; Malaria investigation EQA joint certification by the WHO and Bulgaria Medical Parasitology.
- GIS has been introduced and the work on introduction of the GIS Online system is under way.
- GIS maps were created based on the historical (passport) data of the EDPs deposited in the National Repository.
- The center regularly recorded data on notifiable infectious diseases and conditions, conducted data analysis and
- Appropriate responses; Updated - 6th version of Electronic Integrated Disease Surveillance System was implemented, more than 100, 000 cases were entered during the year. Investigation of unusual, unexpected and epidemiologically important cases was conducted.
- For the diagnostics of an important zoonotic pathogen for the country – Rabies, the PCR detection was introduced allowing the disease to be detected as soon as it is manifested.
- Sentinel surveillance of influenza was held constantly; information about circulated virus strains was shared with the European region. Unified system was established for the 2014-2015 influenza season monitoring, which gives an opportunity to gain the statistical data of influenza and ILI on a regional level. For the proper functioning of the system, electronic databases and protocols were developed, information delivery dates were defined and apart from that, workshops were held with the staff of the municipal public health centers.
- By means of sentinel surveillance of invasive meningitis, the outbreak of viral meningitis has been detected timely. While causative ECHO-30 was identified in the Lugar center.
- Since 2013, the NCDC has been a basic recipient of GFTAM grants. Since 2014, the Center has been implementing the two most important GFTAM programs related to Tuberculosis and HIV/AIDS. The TB program aims at ensuring a universal access to quality diagnostics and treatment of the disease, strengthening of the management, monitoring and evaluation mechanisms of this program and offering financial incentives to patients to enhance their desire to give consent to treatment. Within the framework of the HIV/AIDS grant, preventive measures have been carried out among the high-risk population groups, and a universal access to quality diagnostics and antiretroviral treatment of the disease has been provided.
- A Global HIV/AIDS Response Progress Reporting 2014 was prepared and submitted to the WHO, the European Centre for Disease Prevention and Control (ECDC) and the United Nations (UN); The Report was published in Georgian language and distributed among local and international agencies involved in the HIV/AIDS-related activities.
- The epidemiological surveillance of tuberculosis cases is improved, new definitions have been developed and standardized surveillance format was set up for integrated electronic system.
- Within a joint project under the Bundeswehr Institute of Microbiology, Hanta virus was detected with specific molecular markers; the results were processed and interpreted during field activities.
- A State Committee was set up to promptly respond to cases caused by Ebola virus, where the NCDC was assigned to act as a Secretariat; a special Ebola surveillance headquarters was set up at the Center; the National Action Plan for the prompt response to cases caused by Ebola virus was elaborated. Supervision over passengers coming to Georgia from high-risk countries was carried out in collaboration with the Revenue Service (over 89 people in total); personal protective equipment was purchased; the latest recommendations and guidelines published by the WHO were translated and adapted into Georgian language. An NCDC staff member, Archil Navdarashvili, participated in the disease elimination activities in an Ebola-affected region (Sierra Leone).
- The monitoring of epidemiological surveillance system of parenteral viral hepatitis (B and C hepatitis), recording data received from the system, analysis, conjunctive review, feedback and intervention has been improved.
- The protocol of nationwide population survey of HCV prevalence has been developed. Governmental decree was published on conducting the study.
- The personnel of the MLHSA, LEPL NCDC and the Public Health Centers under local self-governments, as a result of their coordinated activities and planned interventions, responded to the measles and meningitis outbreaks in 2013-2014, which led to the decrease of the number of cases down to a usual seasonal mark. To manage the measles outbreak, an additional dosage of a vaccine against measles, mumps and rubella (MMR) was taken by app. 140,000 persons in 2013-2014.

- To prevent influenza spread in the 2014-2015 season, an influenza vaccine (8,000 syringe/dose) was purchased within the framework of the State Surveillance program, which was used for the vaccination against influenza among high-risk population. 2,000 HIV infected persons were vaccinated against influenza with the Global Fund resources.
- In order to prevent pneumococcal infections, a new, anti-pneumococcal vaccine was introduced as from 1 November 2014;
- Due to the inclusion of new vaccines into the National Immunization Schedule, electronic software of the immunization information system – Geovacc – was updated and introduced in all municipal public health centers.
- In order to ensure/provide vaccination safety, electronic devices for monitoring vaccine storing temperature was introduced from 2014 throughout the country: Freeze Tag (all PH facilities and primary level facilities);
- WHO carried out Assessment of the Cold Chain throughout Georgia, and, based on the received recommendations, the Cold Chain infrastructure was renewed.
- Strategies and Action Plans for the Prevention and Control of Non-communicable Diseases, as well as Hypertension, Cancer, Diabetes, Chronic Pulmonary Disease, Obesity, Healthy diet, Violence and Traumatism, and Alcohol were developed (in Georgian and English languages).
- In order to improve oncological diseases surveillance, the population-based cancer registry has been developed (a tool to ensure continuous, timely and systematic tracking of new cancer cases, cancer-caused mortality cases; assess mortality, morbidity and survival rate; plan and properly implement cancer screening and other preventive measures).
- Trainings were provided to oncologists, oncology surgeons, chemotherapists, radiologists in all regions of Georgia; data registrars and coordinators of the Register were retrained. The Cancer Register was introduced in 2014 in a pilot mode, and since 2015 the Register has been operating in real-time mode throughout the country.
- The IGME visited Georgia to verify maternal and child mortality assessment indicators for Georgia, which resulted in the adjustment of Georgia indicators for mortality of mothers and children of 0-5 age.
- The staff of the Center conducted a reproductive Age Women mortality survey RAMOS-2014 with the support of USAID/ SUSTAIN.
- Reporting form and content for mortality among children under five years has been developed and included in version 6 of the Electronic Integrated Disease Surveillance System (EIDSS).
- The Working group for the revision of normative documentation on the environmental health issues at a national level was updating/elaborating up to 150 normative documents and bringing them in line with the EU Regulations.
- According to the implementation plan of the Association Agenda between the EU and Georgia, the work has been started on the National Environmental and Health Action Plan (NEHAP) and creation of the environmental and health indicators.
- In order to facilitate obtaining information from various ministries on environmental data and raise public access to the information, the list of indicators – diseases associated with the environment was prepared for introduction of the SEIS (Shared Environmental Information System) consistent methodologies.
- In order to ensure safe environment for human health, the EU Twinning Project „Strengthening Environmental Health System in Georgia” has been developed and Submitted to the European Union.
- Assessment of sanitation and hygiene condition has been conducted in the educational facilities according to specially developed questionnaires. The study included almost all secondary schools and pre-schools throughout Georgia.
- Under the methodical guidance of the World Health Organization, the NCDC implemented and coordinated the process of Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS 2013/2014). The report was submitted to the WHO.
- On October 19-25, 2015, an International Lead Poisoning Prevention Week focused on lead-contained paints was conducted with the support of the Global Alliance to Eliminate Lead and the WHO.
- A new state program, “Health Promotion – Public Movement for Healthy Georgia”, was developed.
- Awareness raising and educational activities have been conducted on behavioral risk-factors: development of communication strategies and messages; selection and planning of communication channels; planning/conducting of various education and awareness raising campaigns considering social marketing principles.
- Surveillance of behavioral risk factors were conducted – survey of knowledge, attitudes, and perceptions (KAPs); Revision of studies was conducted in Georgia and a country situational analysis was

done. Secondary analysis of the NCDs risk-factors study data was conducted in 2010.

- Focus group surveys on iron and folic acid deficiency were conducted and based on the survey results, educational materials have been developed; the knowledge, attitude and behavior of the risk groups and stakeholders regarding rabies was studied (Samegrelo, Kakheti); the attitude of the stakeholders towards introduction of a vaccination against rotavirus in the country was studied.
- Educational modules developed for hand hygiene, immunization and tobacco; educational interventions were implemented.
- In the framework of “Enforcement of 100% Smoke-Free Policy in Medical and Educational Institutions” the guidelines on “how to implement smoke-free policies for medical and educational institutions” were reviewed and updated; National Conference "Tobacco or Health" was conducted; trainings for employees of the executive structures responsible for tobacco control and for the representatives of medical and educational sectors throughout Georgia were conducted. Several surveys were conducted: Knowledge and Attitude Survey Towards Tobacco Control, tobacco consumption and second-hand smoke; Assessment of tobacco consumption and clinical based practice among health care providers and medical students/residents; Assessment of Tobacco consumption and attitude among female smokers; Global Youth Tobacco Survey.
- Activities carried out in accordance with 2013-2018 Tobacco Control Action Plan:
- The ministry of Finance of Georgia has increased taxes on tobacco products twice (in 2014 and 2015); the following surveys under the Action Plan were conducted: the National Tobacco Survey, survey of tobacco consumption in Georgia, and the survey for investigation of opinions on second-hand smoke and tobacco control. Consultations were provided through hot lines. On September 29-30, 2014, NCDC conducted a meeting dedicated to the implementation of WHO Tobacco Control Framework Convention.
- On 23-24 October 2014, a regional Meeting of ESPAD (European School Survey Project on Alcohol and Other Drugs) was conducted in Tbilisi.
- Materials to celebrate various world/international days/weeks were prepared: World Cancer Day, World Oral Health Day, World Salt Awareness Week, World Hypertension Day, World Stroke Day, World Heart Day, World Diabetes Day, and the World Day of Remembrance for Road Traffic Victims, For Women’s Health, For World’s Health, No to Violence etc.
- Health promotion workshops were held, children’s rights at hospitals were assessed using the WHO instruments; grant “creation of the contributing environment for elaboration and introduction of an efficient tax policy in Georgia” was obtained.
- In 2014 there were 57 ongoing scientific projects/programs/grants at our center.
- The employees of the Center were working on 17 theses, one of them being approved and ready to be defended. One employee of the Center obtained a Master’s Degree from University of Emory in 2014. Employees of other institutions were working on 2 doctoral dissertations at the Center’s premises.
- In 2014, specialists of NCDC published 15 research papers, 34 abstracts, 19 different publications (including educational materials), and 7 epidemiological bulletins;
- An article was accepted for publication in one of the highly rated medical journals in the world, New England Journal of Medicine (about the discovery of a Novel Orthopox virus), with the Center’s staff as coauthors;
- Two articles were published in The Lancet journal with the Center’s employees being coauthors; an expert examination of the data in 7 publications of the mentioned journal was carried out by the Center’s specialists.
- An annual Statistical Reference-book “Healthcare in Georgia, 2013” and a brief review “healthcare” were prepared and published (in Georgian and English languages).
- 65 employees of the Center participated in international conferences, symposiums, congresses and other events.
- At an annual scientific meeting at Javakhishvili Tbilisi State University, Dr. Paata Imnadze, deputy director of NCDC in Scientific field, received a certificate and an award for the submitted work;
- An NCDC scientist G. Babuadze received “Pascal Prize” award from Ilia State university for his article - “Epidemiology of visceral leishmaniasis in Georgia”, which was published in one of the most prestigious and high Impact Factor international journal (PLOS Neglected Tropical Diseases, Ipm. 4.72).
- The poster “HIV Transmission from Remunerated Blood Donor (RBD) to Recipients in Georgia, 2012 “ presented by the chief specialist of NCDC, I. Burjanadze at the 14th International congress of International Federation of Infection Control (IFIC), received the second prize for the quality of the poster and its educational value;
- In 2014, in total 92 specialists completed internship at the Center, and out of these, 14 students of the

State University were sent for a practical training.

- Within the framework of the WHO project, a survey to study the degree of differentiating causes of death was conducted in selected districts; a survey report and recommendations for the improvement of the current situation were prepared; findings of the survey were presented to local and international organizations.
- In collaboration with MLHSA, the National Statistics Office of Georgia and the Public Service Development Agency of Georgia, reasons for the mortality structure failure were studied, coding degree of causes of death was inspected, coding of maternal mortality was revised and adjusted.
- Transfer of the birth/death registration under the subordination of the MLHSA was initiated. A draft of the relevant order was prepared. The order will enter into force as from 2015.
- In 2013, a new inpatient case-oriented statistical recording system was established, of which all hospital-type institutions throughout the country have been a part since 2014. Outpatient and clinic-type institutions are planned to be included in the same kind of system as from 2015.
- In 2014, the Center managed and administered 8 state programs/components and budgets allocated for them.
- With the use of a multifunctional questionnaire, a full inventory of potentials of local/municipal public health centers operating in the country was made and current capacities were evaluated. A computerized database was created, the findings were analyzed and the basic trends were identified.
- A draft concept for further development of public healthcare system was elaborated; the list of typical municipal programs based on the needs of local population was compiled; a methodic recommendation regarding the organization of municipal PH centers, their supply with human resources of required qualifications and professions and in optimal quantity, as well as their further operation.
- Important steps were made for the development of the regional laboratory network: new diagnosis methods for tuberculosis detection have been implemented at the laboratories of Imereti and Ajara; waste management system was improved; the laboratories of Telavi, Gori and Zugdidi have started commercial activities as laboratory service providers.
- The following was elaborated: drafts of Public Health Services arrangement in self-governing cities in connection with enactment of the Organic Law of Georgia the Local Self-Governance Code; methodic recommendations and instructions on the operation of public health municipal services/centers; a new questionnaire for monitoring/inspection of activities carried out by the public health municipal centers within the framework of the State Epidemiological Surveillance Program.
- Drafts of the following legal acts were elaborated:
 - The Law of Georgia on Making Amendments to the Law of Georgia on Public Procurement (issued).
 - The Law of Georgia on Making Amendments to the Law of Georgia on Public Health (reviewed on a session of the Government of Georgia).
 - Decree No 690 of 14 April 2014 of the Government of Georgia on Measures to be Taken in 2104-2018 for the Prevention of Rabies;
 - Decree No 1023 of 9 June 2014 of the Government of Georgia on Measures to be Taken for the Introduction of Population-based Cancer Registry;
 - Decree No 1807 of 1 October 2014 of the Government of Georgia on Approval of the Prompt Response Plan to Cases Caused by Ebola Virus;
 - Decree No 1817 of 2 October 2014 of the Government of Georgia on Measures to be Taken for the Management and prevention of the Crimean-Congo Hemorrhagic fever Outbreak;
 - Decree No 1724 of 19 September 2014 of the Government of Georgia on Measures to be Taken for Controlling the Viral Meningitis Outbreak Caused by the ECHO30 Enterovirus;
 - Decree No 1799 of 30 September 2014 of the Government of Georgia on Measures to be Taken for the Improvement of Operation of the Vaccines Cold Chain System in Georgia;
 - Decree No 1484 of 26 September 2014 of the Government of Georgia on Measures to be Taken for Conducting the Population-based Survey of Hepatitis Spreading in Georgia;
 - Ordinance No 1817 of 5 September 2014 of the Government of Georgia on Approval of the Maximum Permissible Norms of Ingredients of Tobacco Products Intended for Sales in Georgia, the Rules of Measurement and Regulation of the Norms and the Technical Regulations for Medical Warnings to be Indicated at Tobacco Products Points of Sale, on Advertisement, and Boxes and Packs;
 - Ordinance No 543 of 11 September 2014 of the Government of Georgia on Designating the LEPL L. Sakvarelidze National Center for Disease Control and Public Health as the Scientific Grantor;
 - Ordinance No 347 of 13 May 2014 of the Government of Georgia on Approval of the Response

- Plan to Extremely Dangerous Pathogens and Biological Incidents;
- On Making Amendments to Order No 01-27/N of 23 May 2012 of the Minister of Labor, Health and Social Affairs of Georgia on Rules for the Maintenance and Provision of Medical Statistical Information;
- A draft of the joint order of the Minister of Labor, Health and Social Affairs of Georgia and the Minister of Justice of Georgia on Approval of the Rules of Details and Forms of the Medical Certificates of Birth and Death, their Completion and Sending (sent to the Ministry);
- Intensive cooperation with US partners (CDC, DTRA, WRAIR) and other UN agencies (WHO, UNICEF, UNFPA etc) was carried out; new relations were established and the following documents were signed: Memorandums of Mutual Cooperation with Universities of Maryland (USA) and Oslo (Norway); within the framework of German-Georgian Partnership in the field of Bio-safety – with Bundeswehr Institute of Microbiology (Germany); the EU and UNICRI project implementation started to train bio-safety specialists in South Caucasus region and Turkey; Memorandum of Understanding was signed between the NCDC&PH and the IHME of the University of Washington.
- The Seventh World Congress on CBRN Science & Consequence Management (CSCM) was held, in preparation of which the NCDC played an important role.
- On 22-24 September 2014, the Georgian delegation headed by the Minister of Labor, Health and Social Affairs of Georgia visited the CDC in Atlanta, GA. The delegation had an opportunity to see the CDC Emergency Operations center in operation, the main function of which is to respond to and observe outbreaks and other emergencies occurring in the world. It was planned to establish the similar center at the NCDC with the CDC support, as well as to provide technical assistance in personnel retraining and preparation of appropriate action plans.
- On 22-24 September 2014, within the framework of the visit in the USA, meetings with the NIH management were held; the decision was made to announce a competition for Georgian scientists, through the ISTC funding, with respect to HIV/AIDS, Hepatitis and TB research. Meetings were held with the management of the National Cancer Institute, the National Lung, Heart and Blood Institute and the National Library of Medicine where prospective of future cooperation was discussed.
- On 26 September 2014, the Global Health Security Summit was held in the White House, which was headed by the US political management. Georgia was named as an Exemplary International Partner at the Summit.
- A joint US-Georgian scientific conference was held on the issues of HIV/AIDS, TB and viral Hepatitis. The NCDC contributed much in preparation of this conference.
- On 29-30 September 2014, NCDC conducted a meeting dedicated to the implementation of WHO Tobacco Control Framework Convention.
- In 2014, an automated HR management system was introduced in the Center; a business development unit was established.
- In 2014, 462 interviews were done for various TV channels and internet TVs; 79 TV programs, 137 TV items and 9 live broadcastings were prepared; 6 visits to the press-club; 26 radio programs and 26 radio interviews; the information campaign with respect to MMR, CCHF, Meningitis and pneumococcal vaccines; 24 articles and 122 telephone interviews were published on web pages; 26 articles were published in the print media; 17 press-conferences and 5 briefings were held.
- the Center's new web-page was prepared; the Hot Line became fully operational at the Center (tel.: 2553939).
- The actual spending from Center's budget in 2014 amounted to 28, 691.4 thousand laris. Donors' funding has been significantly increased compared to previous years, which amounted to 11, 565.4 thousand laris in 2014. The volume of the grant projects amounted to 2, 458.6 thousand laris. In 2014, within the framework of commercial activities, the revenues has increased by 12% as compared to the previous year and amounted to 495, 1.0 thousand laris (the revenue from laboratory research has increased by 21% and amounted to 423.4 thousand laris).
- The building of the Lugar Center was put into operation; the Lugar Center started operation at full capacity.
- As a result of a competition arranged by the MLHSA, a new administration and storage building (at Alekseyevka) was designed; a new, amended cadastral survey drawing was prepared, based on which an amended (expanded) plot of land with total area of 45,657 square meters was registered in use of the NCDC.
- During the year, the central office was refurbished, and central heating was set up; the Imereti and Ajara central office of the Regional Department and offices of divisions were refurbished; PC equipment was renewed (90 personal computers; 36 printers; 110 UPSs etc.); so called 'mini press' and 'cold chain'

equipment were purchased (freezing rooms, cold boxes, a vehicle etc.).

Challenges that did not work in 2014:

- Even though, for improving immunization coverage indicators, over 200 trainings were conducted throughout the Country; more than 4,000 specialist were retrained with regard to immunization; there was communication and the Ministry of Education supported activities promoting vaccination of the population of preschool institutions and schools; video commercials promoting vaccination were prepared and are even now intensively broadcasted on TV channels, it still remains a problem to achieve 95% coverage indicators for certain types of antigen (in 2013, vaccination coverage indicators improved in average by 6%, but this increasing trend failed in 2014 and even dropped for certain antigens).
- The issue of doing anti-EDP preventive vaccination of the personnel working in high-risk areas (personnel working in labs on microorganism cultures, field epidemiologists etc.) failed. Purchase of vaccines against plague, tularemia, and anthrax failed during the reporting year.
- Epizootic investigations in natural plague foci (Dedoplistskaro, Ninotsminda) failed because of depreciation of permanent bases of the NCDC.
- The process of inclusion of Laboratory SOPs in general format has not been finished.
- There was not enough time to obtain certification of PFGE method for the Molecular Epidemiology Laboratory. However, working towards this has been commenced.
- The start of operation of the vivarium for lab animals at the Lugar Center failed.
- Approval of the working plan for hypertension prevention and control strategies and the state hypertension program, as well as NCD prevention and control strategies and working plan, and the prevention and control strategies and working plans for cancer and other diseases/risk-factors failed.
- Despite multiple telephone conversations and meetings with the representatives of district PHCs and repeated explanations, incomplete data on mortality of the reproductive age women (15-49 years old) keep coming into the EIDSS. To solve this problem, trainings for the representatives of district PHCs are scheduled in March 2015 with financial and technical support of the USAID/SUSTAIN.
- Consensus was not achieved when reviewing draft laws prepared by the Multisectoral State Commission for Strengthening Tobacco Control Measures at a Government session and the above draft laws were not submitted to the Parliament of Georgia, despite the process of their agreement with various agencies started in November 2013.
- Making public agencies 100% tobacco-free failed.
- Approval of the prepared State Health Promotion Program for 2014 failed.
- The outdated Medical Statistics Information System software was not updated.
- New designs for the state programs were not elaborated.
- Healthcare management in regions was not improved: functions, and rights and duties for the regional representations have not been clearly defined up to now, as well as the legitimacy of organizational/governing actions in relation to other municipal structures within the same region; the “weight” of regional representations cannot be improved at regional level; due to lack of flexibility, it has become harder to timely solve logistical/technical types of problems locally; laboratories could not be supplied with necessary lab materials and means of hygiene/disinfection in the beginning of a year.
- The old, depreciated motor vehicles were not replaced with new, special designation vehicles.

III. Strategic Priority 1: Reduction of Morbidity, Disability and Mortality Caused by Communicable Diseases

Immunization

- Georgia hosted a visit of the international multisectoral mission. The objective of the mission was an evaluation of the financial sustainability of immunization component, by the completion of the support (2018) from GAVI (immunization and vaccination global alliance), as well as determination of readiness of the country and preparation of the action plan for the successful implementation of the Programme. Representatives of UNICEF, WHO and GAVI Alliance participated in the mission. Meetings were held with the chairman of the Health Committee, Ministry of Health, Finance and with representatives of donor organizations (UNICEF, WHO, VRF, WB, CDC-USA).
- Based on the evaluation, an action plan for the ending period of GAVI assistance, for so called, the future transitional stage was elaborated.
- The assessment of effectiveness of vaccine management was conducted to ensure safe immunization and improve "Cold Chain" system (WHO, UNICEF). 67 training on "Cold Chain" for public health services and medical institutions responsible for the process of immunization and storage of vaccines.
- In order to ensure/provide vaccination safety, electronic devices for monitoring storing temperature was introduced throughout the country. (Freeze Tag – in all PH institutions and primary level facilities);
- Further assessment concerning the introduction of rotavirus vaccine was conducted with the participation of local and international experts (WHO, CDC/Atlanta). As a result of the assessment, the main problems related to vaccination were identified and the future action plan was outlined.
- In order to prevent pneumococcal infections, an anti-pneumococcal vaccine was introduced. The assessment of cost-effectiveness of the introduction of the anti-pneumococcal vaccine was conducted by local and international experts. Within the framework of a joint project of the Global Alliance of Vaccine and Immunization (GAVI) and NCDC "To Receive Support for Introduction of New and Underused Vaccines" "on Target Spending of Funds for the Promotion of Introduction of Pneumococcal Vaccines in Georgia", 147 trainings were conducted throughout Georgia. 3,193 specialists attended the trainings, including 1,767 doctors and 1,426 nurses. An assessment of preparedness for the introduction of pneumococcal vaccination at central primary healthcare institutions level was made (WHO). Within the framework of the introduction of pneumococcal vaccines, refresher trainings and communication meetings were conducted at 65 municipality/city PHCs attended by 1,200 specialists. For public information, printed material and a video clip for a communication campaign of the introduction of a pneumococcal vaccine were prepared.
- In order to timely detect circulation of poliovirus in terms of sensitivity, evaluation of surveillance system of poliomyelitis/AFP was conducted. Conforming to the polio eradication strategy, optimal immunization scheme was selected in order to replace OPV by IPV vaccine.
- Vaccination was carried out among WHO recommended risk-groups (nursing homes and orphanage residents, persons on dialysis, children under the age of 18 with the Diabetes mellitus, hospital/medical staff working in the hospital). Within the state program, 8, 000 doses of the vaccine against influenza was purchased. Vaccines were spent completely.
- According to the analysis carried out on the basis of the Requisition Forms for Vaccines, Syringes, Safe Boxes and Other Needs under the State Immunization Program, the population to be vaccinated, the quantity of vaccinations to be done in 3 months, the vaccine wastage rate and the inventories of locally available vaccines and vaccination material, quantities of routine and specific vaccines and serums were calculated and distributed at municipal levels in every 2.5 months.
- Electronic Immunization Module was implemented and the usage of roll-call lists allowed identification of incompletely vaccinated or unvaccinated individuals on municipal, regional and country level; the unified informational system will be used for the management of vaccine supplies and surveillance of vaccine circulations throughout the country.
- With respect to the inclusion of new vaccines in the National Immunization Schedule, the Immunization Information System software – Geovacc – was updated and introduced at all municipal public healthcare levels.
- By order No 01-21/N of 27 February 2014 of the Minister of Labor, Health and Social Affairs of Georgia, amendments were made to Order No 183/N on Approval of the National Preventive Immunization Schedule, and the Immunization Management Procedures and the Necessary Inventory and Reporting Forms (Article 141 on electronic registration of vaccination information and reporting). According to the amendments, vaccinating units were assigned to keep record of their beneficiaries and performed vaccinations within the

limits of this order.

- As of 31 December 2014, 339, 646 vaccinated individuals and 3, 427, 175 conducted vaccinations were registered with the immunization management module. The information is entered by 1,045 providers. The possibility of duplicate records (entry of one and the same beneficiary by several providers) was limited and the database clean-up process has been initiated; the monitoring of the introduction process of the immunization management module was carried out at 82 medical institutions.
- Within the framework of measures to be taken for the prevention of mass spread of measles, in total 146, 483 beneficiaries of 2-30 years of age have been vaccinated with a vaccine containing the measles component; during the anti-
- Measles campaign, secondary surveillance measures were taken throughout the country; the WHO mission visited Georgia to assess additional measures of anti-measles immunization and future actions were planned; within the framework of anti-measles measures, field trips of mobile teams were planned and carried out in hard-to-reach areas.
- In 2014, the Center took 11 trips to transport vaccines, immunoglobulin, serums and vaccination material to district PHCs.
- An explanatory letter and recommendations of a draft decree to continue MMR vaccination in 2015 based on epidemiological indication were prepared.
- Quantities of the planned and unplanned vaccines and vaccination material (FORECAST) were prepared, which are to be purchased for Georgia (including Abkhazia) through the UNICEF within the funding intended for the Immunization program.
- The following reports were prepared and sent to:
 - The WHO Regional Office for Europe (WHO/Europe) – Joint Annual Report – Joint Reporting Form 2013;
 - The GAVI – an annual report – APR 2013;
 - The WHO/Europe – an annual report – “on Measures Taken During 2013 for Maintaining the Polio-free Status”;
 - The WHO/Europe – “the National Plan of Measures for Maintaining the Polio-free Status in 2014-2015”;
 - The WHO/Europe – a report on Taking Supplementary Measures against Measles.
- The GDD application was prepared and submitted to the CDC.
- Training “Immunization” was held at Tbilisi State Medical University (within the framework of the project “Involvement of student volunteers in the immunization program”).
- Training “Immunization In Practise” was held for medical personnel of the military units of the Ministry of Defence of Georgia. 38 students attended the training.
- During the European Immunization week, large-scale communication events were held in order to inform public about vaccination.

Vaccination coverage indicators

The vaccination coverage for Georgia in 2014 was as follows:

- BCG (anti-TB vaccine) – 96.4%;
- Hepatitis B – 93.8%;
- Tdap+HepB+Hib3 (for children under 12 months of age) – 89,6%;
- Tdap (for 18 months old children) – 88.7%;
- OPV3 (for children under 12 months of age) – 88.2%;
- OPV4 (for 18 months old children) – 87%;
- OPV5 (for 5 years old children) – 87.4 %;
- MMR1 – 91.5 %;
- MMR2 – 86.5%;
- DT – 88.4%;
- Td – 66.9%;
- RV1 – 77.2%;
- RV2 – 69.1%.

In total, the following vaccinations have been conducted in Georgia:

- Anti -TB (age: 0-6 days – under 12 months) – 58,370 injections; 153,736 doses of the BCG vaccine were spent; vaccine wastage rate – 2.63;
- Anti -Hepatitis B (age: 0-6 days – under 12 months) – 58,370 injections; 58, 088 doses of the Hepatitis B

Mono vaccine were spent; vaccine wastage rate – 1.05;

- Anti -Poliomyelitis (age: from 2 months – under 15 years) – 261,308 injections; 299,5382 doses of the OPV vaccine were spent; vaccine wastage rate – 1.15;
- Anti -Diphtheria –Tetanus – Pertusis – Hepatitis B – Hemophilus Influenza B (age: from 2 months – under 12 months) – 154,040 injections; 172,040 doses of the vaccine was spent; vaccine wastage rate – 1.12;
- Anti -Tetanus – Diphtheria – Pertussis (18 months old children) – 48,758 injections; 76,602 doses of Tdap vaccine were spent; vaccine wastage rate – 1.5;
- Anti -Diphtheria – Tetanus (age: 1-6 years) – 53,084 injections; 73,627 doses of the DT vaccine were spent; vaccine wastage rate – 1.39;
- Anti -Tetanus – Diphtheria (age: 7–14 years) – 30,620 injections; 45,676 doses of the Td vaccine were spent; vaccine wastage rate – 1.49;
- Anti -Measles – Mumps – Rubella (age: 1–2 years and 5 years) – 167,354 injections; 189,007 doses of the MMR vaccine were spent; vaccine wastage rate – 1.13;
- Anti-Rotavirus (under 12 months) – 81,017 injections; 52, 533 doses of the Rota vaccine were spent; vaccine wastage rate – 1.02.

Vaccination coverage indicators by regions

	BCG under 12 months	Hep B-0 (0-24 hrs)	Tdap+Hib+HepB 3 (4 months-11 months/29days)	Tdap 18 months	DT 5 yrs.	Polio-3 under 12 months	Polio 18 months	Polio 5 yrs.	MMR-1	MMR-2		RV	Td 14 yrs.
Ajara	95.6%	98.3%	95.9%	103%	99.6%	95.2%	95.0%	92.9%	96.9%	94.7%	88.3%	82.3%	88.4%
Kakheti	94.1%	96.4%	93.7%	89.2%	91.4%	95.8%	92.9%	90.8%	94.4%	90.3%	85.5%	80.3%	82.6%
Imereti	94.7%	96.4%	90.1%	91.7%	88.9%	90.5%	90.9%	91.3%	92.6%	91.5%	69.5%	61.4%	77.8%
Samegrelo	97.1%	96.2%	88.0%	89.5%	86.8%	86.1%	87.4%	85.1%	90.4%	85.7%	74.8%	65.8%	77.2%
Shida Kartli	92.5%	93.1%	88.9%	84.6%	69.1%	90.9%	82.5%	71.3%	89.2%	70.4%	79.1%	76.3%	61.2%
Kvemo Kartli	96.8%	97.4%	87.2%	79.1%	89.4%	88.9%	83.3%	84.2%	88.0%	83.3%	76.5%	67.3%	52.3%
Guria	97.6%	97.6%	90.9%	74.8%	80.0%	90.3%	90.5%	84.5%	95.5%	83.1%	70.8%	59.9%	49.2%
Tbilisi city	98.0%	84.4%	81.5%	84.6%	85.1%	81.7%	82.0%	86.8%	84.4%		75.1%	64.7%	51.1%
Samtskhe-Javakheti	94.2%	93.0%	87.0%	80.8%	93.6%	94.8%	94.8%	97.9%	94.7%	97.7%	78.8%	75.8%	85.2%
Mtskheta-Mtianeti	95.5%	95.9%	89.9%	84.4%	86.6%	91.0%	85.0%	89.7%	95.2%	91.2%	80.3%	74.7%	75.3%
Racha-Lechkhumi	94.3%	97.1%	93.8%	90.4%	91.5%	92.1%	90.0%	84.6%	94.1%	91.9%	79.3%	64.9%	87.0%
Georgia	96.4%	91.1%	87.5%	87.2%	87.3%	88.2%	86.9%	87.2%	89.7%	85.8%	77.1%	69.0%	66.4%

Vaccines received/spent in 2014

Name	Inventory for 1 January 2014	Received (dose, unit, set)	Spent (dose, unit, set)	Inventory for 1 January 2015	Expired during the reporting period
Poliomyelitis	164,820	330,000	382,050	112,770	190 doses
DT	43,480	75,800	112,310	6,970	
Td	62,560	46,200	102,460	6,300	
Tritanrix (Hib)	100,224	149,500	242,360	7,364	57,000 doses
Tdap	39,020	75,000	101,610	12,410	
BCG	56,940	153,700	190,940	19700	560 doses
Hepatitis B,	39,980	93,490	94,450	39,020	

Rotarix	98,594	124,500	86,734	136,360	
Priorix (MMR)	2,127	260,200	254,933	7,394	2 doses
Synflorix (Pneumococcal vaccine)	0	166,000	52,950	113,050	
Consumables (0,5ml - 2ml - 0,05ml – safe box)	555,245	976,550	1,066,269	465,526	292 units
anti-rabies immunoglobulin	683	23,545	23,127	1,101	
anti-rabies vaccine	14,257	195,000	181,197	28,060	
anti-snake venom	19	235	238	16	
Stamaril	240	1,900	1,280	860	
anti-diphtheria vaccine	392	1,319	67	1,644	
anti-tetanus vaccine	349	0	256	93	
Botulism type A	15	162	93	84	
Botulism type B	36	162	114	84	22 set
Botulism type E	15	162	93	84	1 set
Total	1,178,996	2,673,425	2,893,531	958,890	

Surveillance of Communicable Diseases

- Response to notifiable diseases – conduct of epidemiologic investigations and sample collection.
- Monitoring of the epidemiological investigation data of the infectious diseases entered into the Electronic Integrated Disease Surveillance System (EIDSS) by the districts.
- Assessment of the accuracy and completeness of data in the disease investigation cards and their comparison/verification with the statistical form IV-3 and the EIDSS form H02.
- To introduce surveillance of the influenza and ILI, the following was implemented at each territorial unit of Georgia – trainings and working meetings were held for the staff of municipal health centers and NCDC regional branches; the standard electronic forms were developed for weekly registration/analysis of the influenza and ILI; weekly sentinel surveillance of the influenza and ILI was carried out.
- According to the state public health care program requirements, reports and information were provided to the state, international and other legal/physical entities.
- The following was ensured: timely provision of the support stations with laboratory investigation results, entry of the results into the database and reporting.
- Four hydrophobia confirmed cases and three rejected cases were examined and analyzed.
- An aseptic meningitis outbreak was detected and handled within the competence.
- An acute Hepatitis B outbreak was detected at one of Tbilisi clinics, which was examined, appropriately responded to and recommendations were prepared for the MLHSA for further prevention of an outbreak.
- Lectures were delivered for doctors concerning “Diseases accompanied by hemorrhagic fevers with the focus on Ebola and CCHF”.
- A working meeting regarding Hepatitis C was prepared; a presentation – “Population Survey of Hepatitis C” – was submitted; a protocol for the population survey of Hepatitis C was developed together with CDC experts.
- Rural doctors of Aspindza, Akhaltsikhe, Adigeni, Khoni, and Ozurgeti districts were retrained and awareness of the population was raised with respect to brucellosis issues; epidemiologic situation of the population infection with brucellosis was examined locally; suspect brucellosis patients were laboratory tested.
- Rural doctors of Khashuri, Borjomi, Kaspi and Mtskheta districts were retrained and awareness of the population was raised with respect to CCHF issues.
- Clinical samples for laboratory tests were regularly collected from Children’s Infectious Disease and M. Iashvili Clinics to study etiologic structure of the diseases.
- By way of field visits, 46 outbreaks and individual disease (botulism, salmonellosis, shigellosis, tropical

malaria etc.) cases were studied.

- Within the Leishmaniasis project, contacts of individuals with the disease risk were found in Kvareli and Sagarejo districts and clinical samples (510 blood samples) were received to conduct laboratory tests.
- Regular monitoring of the information received by the Center as telephonograms was carried out and the information was communicated to appropriate PHCs when necessary.
- Co-participation in development of the SOP on “Visits of the NCDC&PH employees to probable EDP-infected patients”.
- Participation in working meetings arranged by the WHO (in Bazaleti, Batumi) that were dedicated to problems of antimicrobial resistance. At the conference in Batumi the following was presented: “Antimicrobial resistance in Georgia in 2008-2013”.
- Participation in an advisory meeting held at the WHO-Europe Headquarters, which mainly was aimed at reviewing the 2016-2025 global technical strategy on the issues of control and elimination of malaria and developing the recommendations.
- Together with CDC specialists (Department of Health and Human Services/CDC), procedures for the detection, registration, maintenance and communication of statistical information of the diseases accompanied by diarrhea in Georgia (both, individual and group cases) were studied (on the model of Ajara, Imereti and Shida Kartli Offices of Public Healthcare Regional Management).
- A visit was made in Atlanta (CDC) within the framework of the Demonstration Project for the Implementation of the Infection Control.
- Participation in the following events within the South Caucasus Field Epidemiology and Laboratory Training Program:
 - Regarding rabies – in Samegrelo villages;
 - In a field survey on Awareness and Attitude towards Breast Cancer and Cervical Cancer Prevention among Female Population of Villages in Gori and Zugdidi Districts.
 - In a survey on Study of the Knowledge, Attitude and Practice of Healthcare Personnel about Hepatitis C.
 - In the assessment of level of awareness of the population in Adjara about immunization.
 - As observers, in conducting brief TADR-system exercises by Battelle (in Gori, Ozurgeti and Zugdidi).
- On monthly basis, reports on number of rotavirus gastroenteritis cases in children under 5 years of age together with the laboratory test results of fecal specimens were sent to the WHO-Europe.
- Work has been done in Georgia in order to certify its territory as malaria-free by 2015.
- Six imported cases of tropical malaria were detected.
- Participation in the EIDSS v.6 pilot testing, international meetings (in Baku and Batumi), and in monthly teleconferences.
- Culture preparation and transfer to Azerbaijan – in accordance with goals for the enhancement of unified regional surveillance.
- Reporting forms were restored according to the methodic recommendations for the routine surveillance of HIV infection; monitoring of the institutions involved in the HIV surveillance became more intense to improve reporting;
- Preparation of documentation for selecting the main recipient of the Global Fund and an active participation in preparation works for transition period.
- Trainings were conducted for specialists of the municipal public healthcare centers to get them acquainted with the new state TB program design. 160 epidemiologists were retrained; protocols were prepared for them and were distributed (with the financial and technical support of the TB prevention project).
- The standard surveillance format for definitions required for the TB cases surveillance was developed; non-stop monitoring and communication of the TB surveillance component was carried out – data comparison based on the data of the state program, EIDSS and clinical database; TB management guidelines were prepared.
- Preparatory work for the GDD project – Study of Long term Outcome in Patients by Terminated Treatment – was done: development of the questionnaires and protocols, selection and training of interviewers, coordination and monitoring of field works, entry of data into the database for further processing and analysis.
- Activities were carried out with respect to reviewing the issue of the MSM donation at the Constitutional Court within the joint working group together with representatives of the AIDS Center and the MLHSA.
- Participation in the UNAIDS project on Cost-effectiveness of Anti-retroviral treatment, Opioid Replacement Therapy and Needle and Syringe Program.
- Monitoring of procedures for transportation of samples received for HIV confirmation, sample condition and storage; surveillance of cases detected within the HIV/AIDS state program, consultation and referral for their

registration with clinical database and receiving appropriate medical service; participation in meetings of the HIV/AIDS and STI prevention working group (PTF); introduction and implementation of the National HIV/AIDS Monitoring and Assessment System, which includes the database improvement, retraining of appropriate specialists to improve surveillance, revision of appropriate indicators etc.

- Multi-sectoral involvement in the process of filling out a questionnaire on the issues of HIV/AIDS, malaria and other infectious diseases of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). The filled-out questionnaire was submitted to the Commission.
- Non-stop monitoring and communication of the surveillance component was carried out at all levels of the public healthcare service; monitoring of the surveillance system for parenteral viral Hepatitis (B and C) registered in Georgia; registration of the data received through the system, analysis, feedback, and intervention; development of a new case investigation form for Hepatitis B and C; development of standard definitions and surveillance forms for the surveillance of syphilis and gonorrhea; preparation of information on STIs for the WHO Regional Office and periodic joint work with a WHO expert through Skype for the purpose of improving the STI statistics and epidemiologic surveillance.
- Enhancement of the surveillance of congenital syphilis cases to study the reasons for the increase of newborn syphilis cases.
- The following was prepared:
 - Multiyear dynamics of the annual infectious disease reviews for 2013 and forecast; infectious disease reviews for the first 6 months of 2014.
 - 2013 report on global HIV/AIDS response submitted to the WHO, ECDC and the UN and distributed among local and international agencies working in the field of HIV/AIDS.
 - Amendments to be made to the state epidemiologic surveillance program components (malaria, helminthoses, nosocomial infections, diarrheas) with appropriate justifications;
 - On periodic medical examination of persons engaged in air transportation.
 - Issues of medical/laboratory examination of herdsmen living at animal movement routes, on summer and winter pastures, and their family members for certain infections for inclusion in the state epidemiologic surveillance program for 2014.
 - Information on outbreaks and epidemiologic situations of specific nosologies.
 - Proposals and opinions with respect to food safety issues regarding the amendments to be made to the food safety law.
 - Conclusions with regard to group food-borne infection of military servants.
 - The MLHSA was additionally provided with an electronic version of the package of amendments to be made to Order No 64/N of 19 March 2002 of the Minister of Labor, Health and Social Affairs of Georgia on Improvement of Medical and Preventive Disinfection Activity in the Country.
 - Guidelines on general procedures for disinfection and sterilization of medical equipment.
 - Comments and suggestions on the draft of the Rules for Implementing State Control over the Food of Animal Origin.
 - Measles and Rubella report for the recent years in terms of cooperation with the WHO.
 - Daily digest about communicable diseases.
 - Material on Global Health Security.
 - Leaflets on Anthrax, Brucellosis, and CCHF.
 - TV clips on CCHF, and Measles. Recommendations for the prevention of infectious diseases at Abandoned Children Houses and Old People's Homes.

International Health Regulations

- Notification on unusual, unexpected events and events presenting the public health risk were constantly sent to WHO IHR contact point.
- According to the recommendations received from WHO, in order to avoid the spread of polio, vaccination status of arriving passengers from risk countries was checked (Nigeria, Pakistan, Afghanistan and Syria) and in case of its absence, ensuring their vaccination.
- With the help of other agencies, proper conditions were set up in order to ensure the vaccination of passengers from high-risk countries and Syria, with an unknown vaccination or unvaccinated status at the entry point.
- Due to the current outbreak of Ebola ,epidemiological surveillance was imposed on passengers arrived from Guinea, Sierra Leone, Liberia and Nigeria, during 21 days (on 89 people).National action plan of response and preparedness was developed; special commission for Ebola epidemiological surveillance was formed; information about epidemiological situation was prepared on the daily basis.
- According to the Annex 2 of the International Health Regulations, risk of the public health was assessed in 10

different cases.

- International Health Regulation agencies were briefed about:
 - Enteroviral meningitis and CCHF outbreaks in the country;
 - Botulism caused by imported products for private consumption, which resulted in the removal of high-risk products by the manufacturer country.

Outbreaks of some communicable diseases

Outbreak of aseptic meningitis

From 24 April 2014, the number of hospitalized children with the viral meningitis diagnose has started to increase at M. Iashvili Children's Central Hospital and the Center for Infectious Pathology, which resulted in ordering temporary surveillance over both clinics. Within the surveillance, epidemiologic information and clinical samples of cases received by the clinics were collected.

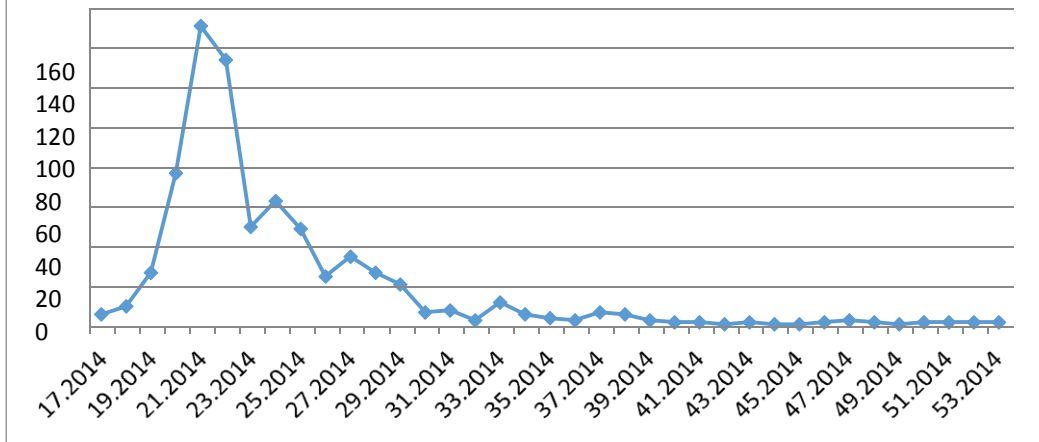
Descriptive analysis of collected data showed that there had been an outbreak of viral meningitis. The Lugal Center identified enterovirus in samples by PCR and serological methods; ECHO30 was identified by virology tests. There had not been any cases caused by ECHO30 detected up to 2014.

The center expanded the area of surveillance. The case definition of viral meningitis was developed. Routine surveillance on viral meningitis entered into force from 12 June 2014; all meningitis cases subjected to emergency notification and epidemiological research. Apart from that, cases of meningitis and research data have been detected in EIDSS in the #02 form.

Since 24 April 2014 to 31 December, 1200 cases of viral meningitis were registered (incidence 26,7). Clinical courses of all cases were mild; no death was reported. 140 (12%) cases were laboratory confirmed.

Initially, the increase of cases occurred in Tbilisi, the growth trend in other regions was detected in the second half of May; in December, 31 cases were registered in all regions, throughout the country. 813 cases of viral meningitis were entered into the EIDSS. Analysis was conducted in 2 clinics, in accordance with the number of admissions. 3-14 age group accounted for 75% of cases. By regions 45% of cases are registered in Tbilisi, while 26% in Imereti. (respectively incidence is 46,4 and 45,4).

Viral Meningitis cases by weeks at 2 Tbilisi clinics
24.04.2014-31.12.20



Region	Quantity	Indicator per 100,000 people
Tbilisi	543	46.4
Kakheti	25	6.2
Kvemo Kartli	84	16.4
Shida Kartli	35	11.2
Samtskhe-Javakheti	23	10.8
Mtskheta-Mtianeti	35	32.1
Ajara	62	15.4
Samegrelo-Zemo Svaneti	47	9.8
Imereti	319	45.4
Guria	23	16.5
Racha-Lechkhumi – Kvemo Svaneti	4	8.6
Total	1200	26.7

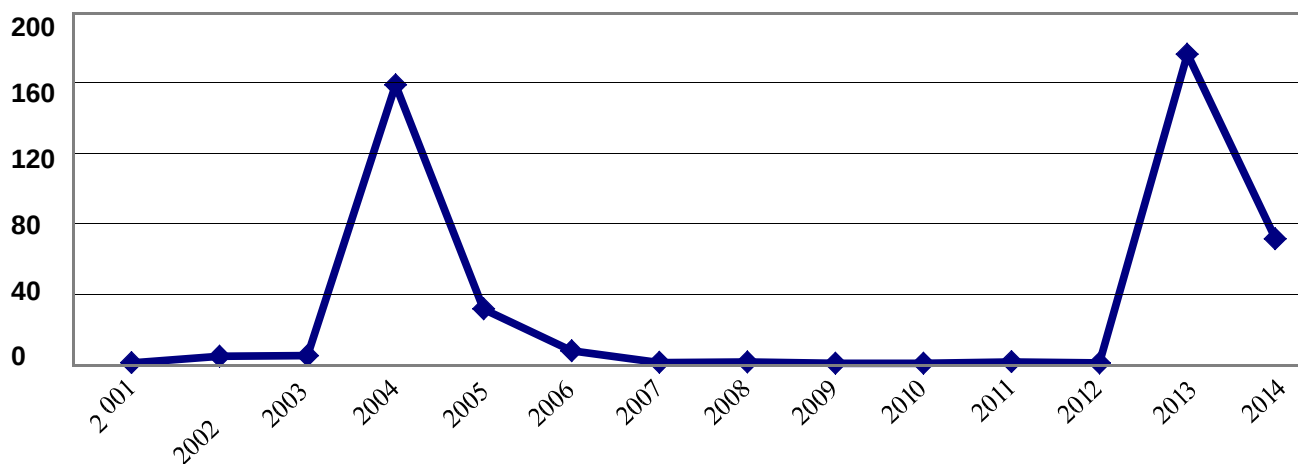
Measles outbreak

Similar to other countries, measles in Georgia is among notifiable infectious diseases. Morbidity increase was recorded in 2004 and further in 2013.

The spread of measles in 2013 was due to an unsuccessful vaccination campaign in 2008, which contributed to the accumulation of an undervaccinated cohort and was a condition for the epidemic increase. The most affected age groups were children under 1 year and 15-30.

According to the WHO recommendations, elimination and reduction of morbidity caused by measles, requires twofold, 95% vaccination coverage and the establishment of supervision on each case, including laboratory tests. In order to moderate the spread of the epidemic, some additional campaigns were held: vaccination against measles for children under the age of 14 is completed, additional vaccinations were conducted for medical workers, special units and for the population aged 15-30. During 2013-2014 more than 140,000 people were vaccinated throughout the country. Preventive measures resulted in a decreasing tendency of disease incidence. (2013– 7,872 cases, 2014– more than 3,000 cases).

Dynamics of Measles Incidence, Georgia



Information on Certain Diseases/Situation, Georgia
01.01.2014 - 31.12.2014

N	Disease	ICD-10 code	<1	1-4	5-14	15-19	20-29	30-59	> 60	Total	Lab Test	Incl. Lab confirmed	Total confirmed (lab or epid links)
1	Diphtheria	A36	0	0	0	0	2	0	0	2	2	0	0
2	Pertussis	A37	52	25	13	3	2	0	0	95	9	9	9
3	tetanus	A33-35	0	1	0	0	1	1	4	7			
4	Acute Flaccid Paralysis	A80	0	2	11	0	0	0	0	13	6	0	
5	Measles	B05	326	514	500	403	879	563	6	3,191	406	391	523
6	Rubella	B06	24	75	30	3	11	6	0	149	2	2	2
7	Mumps	B26	0	32	15	3	4	1	0	55	0	0	0
8	Acute Viral hepatitis A	B15	0	6	52	21	10	5	4	98	78	69	50
9	Acute Viral hepatitis B	B16	0	0	2	7	41	70	11	131	112	114	107
10	Acute Viral hepatitis C	B17.1	0	0	0	1	15	130	24	169	165	165	161
11	Acute Viral hepatitis E	B17.2	0	0	0	0	0	1	0	1	1	1	1
12	Chronic Viral hepatitis B	B18.0 - B18.1	0	0	10	50	427	674	90	1,252	1,382	1,155	1,102
13	Chronic Viral hepatitis C	B18.2	0	1	0	17	224	1,883	358	2,478	2,600	2,387	2,288
14	Cholera	A00	0	0	0	0	0	0	0	0	0	0	0
15	Typhoid	A01.0	0	0	0	0	0	0	0	0	0	0	0
16	Salmonellosis	A02	7	23	21	13	66	136	29	295	132	85	295
17	Shigellosis	A03	15	235	243	23	38	80	67	701	534	507	701
18	Enterohemorrhagic escherichiosis	A04.3	0	1	1	0	1	2	0	5	5	5	5
19	Yersiniosis	A04.6	0	0	0	0	0	0	0	0	0	0	0
20	Probable food-borne intoxication	A05.9; T61; T62; T64	731	4,634	5,023	1,410	2,705	4,785	2,130	21,397	166		
21	Botulism	A05.1	0	0	0	2	3	4	3	12	5	4	4
22	Diarrheas of probable infectious cause	A09	3,549	1,020	4,326	842	1,996	2,896	1,665	25,480	3,617		
25	Plague	A20	0	0	0	0	0	0	0	0	0	0	0
26	Tularemia	A21	0	0	0	0	0	1	0	1	1	0	0

27	Anthrax	A22	0	0	1	1	7	41	7	57	49	35	35
28	Brucellosis	A23	0	5	15	19	53	152	38	282	199	6	6
29	Lyme disease (borreliosis)	A69.2	0	2	0	1	1	4	1	9	9	9	7
30	Typhus	A75	0	0	0	0	0	0	0	0	0	0	0
31	Spotted fever and other rickettsiosis	A77, A79	0	0	0	0	0	0	0	0	0	0	0
32	Q fever	A78	0	2	0	0	0	3	0	5	1	0	0
33	Rabies	A82	0	0	1	0	0	3	0	4	4	4	4
34	Viral encephalitis	A81; A83-86	0	0	0	0	0	0	0	0	0	0	0
35	Probable viral hemorrhagic fevers	A90-A99	0	1	0	1	7	17	5	31	25		
36	Infection caused by hantavirus	A98.5; B33.4	0	0	0	1	3	2	2	8	3	3	3
37	Crimean-Congo Hemorrhagic fever	A98.0	0	1	0	1	3	14	5	24	23	22	23
38	Yellow fever	A95	0	0	0	0	0	0	0	0	0	0	0
39	Dengue	A90;	0	0	0	0	0	0	0	0	0	0	0
40	Leptospirosis	A27	0	0	1	9	22	29	15	77	67	61	54
41	Listeriosis	A32	0	0	0	0	0	0	0	0	0	0	0
42	Legionellosis	A48.1	0	0	0	0	0	0	0	0	0	0	0
43	Meningococemia	A39.2; A39.3; A39.4	5	6	2	0	0	1	0	14	9	0	0
44	Meningitis caused by N. meningitidis	A39.0	1	2	0	0	0	0	1	4	3	2	2
45	Infection caused by Haemophilus INF.B	A41.3; A49.2; B96.3; J14;	0	0	0	0	0	0	0	0	0	0	0
46	Meningitis caused by Haemophilus INF.B	G00.0	0	0	0	0	0	0	0	0	0	0	0
47	Infection caused by S. pneumoniae	M00.1; A40.3; I30.1	1	0	0	0	0	0	0	1	1	1	1
48	Meningitis caused by S. pneumoniae	G00.1	2	0	1	0	0	3	2	8	8	8	8
49	Meningitis caused by M. tuberculosis	A17.0	0	3	0	1	11	21	6	43	26	4	4
50	Post vaccination unusual reactions and complications	Y58- Y59; Y64.1	6	3	0	0	0	0	0	9	0	0	0
51	Nosocomial urinary tract infection	Y95 (N39.0)	0	0	1	0	2	6	10	19	18	17	16
52	Nosocomial pneumonia (except for ventilator- associated pneumonia)	Y95 (J18.9)	0	0	0	0	0	5	13	18	15	14	13
53	Ventilator- associated pneumonia	Y95 (J18.9)	1	0	0	1	4	28	36	70	63	64	62
54	Intravascular catheter-associated infection	Y95 (A41.9)	0	0	0	1	1	3	7	12	10	9	9

55	Surgical site infection	T81.4	0	0	0	0	2	8	8	18	8	8	8
56	Newborn bacterial sepsis	P36	51	0	0	0	0	0	0	51	41	38	38
57	Deaths in women aged 15-49 years		0	0	0	16	25	168	0	209			
58	Bird flu	J09	0	0	0	0	0	0	0	0	0	0	0
59	Scarlet fever	A38	23	557	343	20	16	12	0	967	0	0	0
60	Chicken pox	B01	327	2,257	2,420	512	424	186	24	6,150	0	0	0
61	Syphilis	A50-53	17	1	0	23	197	792	167	1,216	960	441	443
62	Gonorrhea	A54	0	2	0	9	99	62	1	175	156	156	156
63	Leishmaniasis	B55	3	27	2	1	0	7	1	41	39	37	37
64	Echinococcosis	B67	0	0	1	2	8	40	17	68	68	68	68
65	Trichinellosis	B75	0	0	0	0	0	0	0	0	0	0	0
66	Amoebiasis	A06	0	0	1	0	1	10	2	14	10	10	9
67	Bite of a venomous reptile	T63.0; T63.1	0	3	5	7	12	24	13	64			
68	Bite of a venomous insect	T63.2- T63.4	8	56	70	34	61	148	70	447			

IV. Strategic Priority 2: Reduction of Morbidity, Disability and Mortality Caused by Non-communicable Diseases (NCDs)

Within the reporting period:

- Strategies and Action Plans for the Prevention and Control of Non-communicable Diseases, as well as Hypertension, Cancer, Diabetes, Chronic Pulmonary Diseases, Obesity, Healthy diet, reduction of salt overconsumption, Violence and Traumatism, Alcohol, Tobacco were developed and translated into English.
- The following documents were prepared: NCD-related interventions in the primary health care settings, establishment of the State Committee regarding the development of Ureki resort; draft ordinance of the Government of Georgia for strengthening potential of curative and rehabilitation resources of Georgia's resorts.
- Participation in: the performance of 2014 obligations undertaken by the Center within the framework of the Association Agreement; the creation of the birth and death registration improvement module; the preparation works for the introduction of the Birth Register.
- Implemented: Nature of the spreading of NCDs, traumas and accidents has been analyzed; The data received from Electronic Integrated Disease Surveillance System regarding reproductive age mortality of women has been processed and analyzed; trends of reproductive health, maternal and child health have also been analyzed.
- A discussion on the National Cancer Strategy and 5-year Action Plan was conducted with participation of oncologists and other stakeholders; discussions on the Guideline for the Management of Hypertension; meetings regarding the introduction of the Cancer Registry; meeting regarding the introduction of organized screening of cervical cancer; working meeting with participation of the Embassy of Czech Republic, Caritas of Czech Republic, Cancer Prevention Center and NGO "tanadgoma" to discuss results of the Project on "Education of rural outpatient ambulatory medical personnel in the field of oncology" implemented in Zugdidi district through the financial support of Czech Development Agency.
- The Assessment Mission of International Atomic Energy Agency and WHO's joint Instrument imPACT (Program of Action for Cancer Therapy) paid a visit in Georgia on July 7-11, 2014. In the framework of the visit various individual and group meetings were conducted and initial report was prepared.
- In order to improve cancer surveillance, the population-based cancer registry has been developed (a tool to ensure continuous, timely and systematic tracking of new cancer cases, cancer-caused mortality cases; assess mortality, morbidity and survival rate; plan and properly implement cancer screening and other preventive measures).
- On May 1, 2014, the NCDC and the WHO Country Office jointly held a working meeting on Health 2020 and NCDs. The meeting was attended by the NCDC management, representatives of the WHO Country Office and donor organizations, and the experts involved in the prevention of NCDs.
- The IGME visited Georgia to verify maternal and child mortality assessment indicators for Georgia, which resulted in the adjustment of Georgia indicators for mortality of mothers and children of 0-5 age.
- Reporting form and content for mortality among children under five years has been developed and included in version 6 of the Electronic Integrated Disease Surveillance System (EIDSS).
- Reproductive Age mortality survey RAMOS-2014 was conducted (with the support of USAID/SUSTAIN).

V. Strategic Priority 3: Assessment and correction of environmental hazards and behavioral risk-factors for improvement of health in population

Assessment of environmental hazards

Prepared information:

- About the status of fulfilment of measures under the requirements of the protocol of the second session of the Joint Georgian-Egyptian Intergovernmental Commission for economic, scientific and technical cooperation.
- About the Minamata Convention on Mercury.
- Communication of the information to the United Nations High Commissioner for Human Rights in accordance with the Human Rights Council Resolution, The Human Right to Safe Drinking Water and Sanitation (2013), A/HRC/RES/24/18.
- About the progress of activities in the European integration process of Georgia following the Vilnius Summit.
- Obtaining by the International Atomic Energy Agency of the information on limiting the exposure of population to natural sources of radiation from Member States.
- About a draft of the standards developed according to Annex No3 to the Agreement on Technical Barriers to Trade of the World Trade Organization, which must be adopted in accordance with the submitted program during 2014.
- About problems existing in the village Kelktseuli (Shindisi community) of Gori district with regard to drinking water supply.
- About the sanitary protection areas of Tbilisi Sea based on the request by a Non-entrepreneurial (Non-commercial) Legal Entity "Usaprtkho Sivrtse" (Safe Space).
- About the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity.
- About amendments in relation to the note of the Ramsar Convention Secretariat.
- About restoration of medical rooms at schools.
- Burden of environment-related diseases and epidemiologic situation according to current evidence.

Implemented measures

- Participation in a working group set up for conducting the initiation activities to approve the protocol – Water and Health.
- Epidemiological survey of the contamination of drinking water and mixing of the drinking and sewage waters in settlement Kostafe in Sagarejo.
- Epidemiological survey of the group chemical intoxication case in the village Arkhiloskalo; investigation of a group case of a disease of an unidentified etiology using laboratory investigation expertise.
- International lead poisoning prevention week (basically focusing on lead paints) was conducted on 19-25 October with the support of the WHO.
- Participation in a working consultation group of the project – Waste Management Technologies in Regions – implemented by the International City/County management Association together with the CENN with the support of the USAID.
- Development of the thematic regulatory and normative base existing within the framework of the European directives.

Fulfillment of the obligations assumed under the EU-Georgia Association Agreement

- The Interagency Working Group on the National Environment and Health Action Plan (NEHAP) provided for under the 2014 National Action Plan and the 2014-2017 action plan of the agreement on the Deep and Comprehensive Free Trade Area (DCFTA) was approved.
- In order to facilitate obtaining information from various ministries on environmental data and raise public access to the information, the list of indicators – diseases associated with the environment was prepared for introduction of the SEIS (Shared Environmental Information System) consistent methodologies.

Reviewed projects

- A report was prepared on the project of JSC Samto Kimia-2000 – “on the Issue of Neutralization of Harmful Gases Exhausted from Motor Vehicles and Emitted from Enterprises into the Ambient Air through a New Type, Multifunction Catalyser, the Natural Ceolite of Georgia – Clinoptilolite”.
- A reply was prepared with regard to the questionnaire of the project – “State Regulation of Food Safety – Assessment of the Activities Performed by the Georgian Authorities in 2013”.
- The “Plan of Preventive Measures with Respect to Ebola Outbreak in 2014” was prepared.
- A report was prepared on the submitted project “on Provision of the Population of Mtskheta Municipality with Quality Drinking Water and Performance of Monitoring”.
- A draft of the protocol – Water and Health – was prepared in Georgian language and was sent out to various ministries.
- To ensure safe environment for human health, the EU Twinning Project “Strengthening Environmental Health System in Georgia” has been developed and Submitted to the European Union. The project proposal was reviewed by the EU Programs Coordination Department of the Office of the State Minister of Georgia on European and Euro-Atlantic Integration and by the experts. The project proposal was positively evaluated.
- A report was prepared with regard to providing Shekviteli resort with drinking water, establishing the sanitary protection areas for the construction of the planned reservoirs and issuing permissions.
- A draft version of forms for the monitoring of educational/childcare institutions was prepared for the purpose of fulfilling the decree No 1724 of 19 September 2014 of the Government of Georgia on Measures to be Taken for Controlling the Viral Meningitis Outbreak Caused by the ECHO30 Enterovirus.
- A report was prepared on the project proposal of LLC Bunebis Saotsreba (Wonder of Nature) – “Usage of the Unique Therapeutic Qualities of the Ureki Magnetic Sand for Public Health”.
- A primary report on the assessment of the disaster risk reduction system capabilities, under the auspices of the UNDP in Georgia, was prepared and submitted.
- Working on the radiation safety project application.

Review of technical regulations

- waste
- disinfection
- swimming waters
- underground waters
- noise
- vibration

With respect to registration of disinfection, deratization and desinsection means, 129 applications for the registration of 295 means were reviewed during 2014. 62 means were registered and 233 means were denied registration.

Assessment of behavioral risk-factors and improvement of health

- A new state program, “Health Promotion – Public Movement for Healthy Georgia”, was developed (including the tobacco control component) and submitted to the MLHSA.
- During 2014, health promotional and educational events were arranged with respect to non-communicable and communicable diseases, mother and child, and environmental health issues. Awareness raising and educational activities have been conducted: development of communication strategies and messages; selection and planning of communication channels; planning/conducting of various education and awareness raising campaigns considering social marketing principles.
- Surveillance of behavioral risk factors was conducted – survey of knowledge, attitudes, and perceptions (KAPs); Revision of studies conducted in Georgia and the country situational analysis was performed. Secondary analysis of the NCD risk-factors study data was conducted. Secondary analysis of data of the NCDs risk-factors study STEPs (STEP-wise approach to NCD Surveillance - STEPs)¹, which was conducted in 2010, was prepared aiming at identification of the prevailing risk-behaviors related to hypertension in adult population of Georgia and of the target population for facilitating the elaboration of efficient interventions oriented on the change of behavioral risk factors.
- In the framework of "Smoke-Free Medical and Educational Institutions" the guidelines on "how to implement smoke-free policies for medical and educational institutions" were reviewed and updated and a new design was prepared; National Conference "Tobacco or Health" was conducted; trainings for employees of the executive structures responsible for tobacco control and for the representatives of medical and educational institutions were conducted. Several surveys were conducted: Knowledge and Attitude Survey Towards Tobacco Control, tobacco consumption and second-hand smoke; Assessment of tobacco consumption and clinical based practice among health care providers and medical

students/residents; Assessment of Tobacco consumption and attitude among female smokers; Global Youth Tobacco Survey.

- Activities conducted in accordance with the Tobacco Control Action Plan of 2013-2018: the Ministry of Finance of Georgia twice (in 2014 and 2015) increased taxes on tobacco products; the following surveys were conducted: the National Tobacco Survey, survey of tobacco consumption in Georgia, and the survey for investigation of opinions on second-hand smoke and tobacco control. Based on primary results, spread of smoking among population is 28.1% (according to the STEPs results in 2010, this indicator was 30.3%); majority of population (71%) supports or is neutral to the increase of taxes on tobacco products; 90% supports tobacco-free work places; 70% supports tobacco-free restaurants, bars, and cafes; consultations are provided through Tobacco Hot Lines (Tobacco Hot Line (tel.: 116001) operates daily except weekends from 10 am to 6 pm).
- On September 29-30, 2014, NCDC conducted a meeting dedicated to the implementation of WHO Tobacco Control Framework Convention.

¹Non-Communicable Diseases Risk-Factors Survey STEPs, Georgia 2010 Retrieved from <http://ncdc.ge/index.php?do=fullmod&mid=302> in October 2013

- On October 23-24, 2014, a regional Meeting of ESPAD - European School Survey Project on Alcohol and Other Drugs was conducted in Tbilisi attended by the representatives of ESPAD Head Office and different countries (Poland, Ukraine, Moldova, Russia, Armenia, and Azerbaijan).
- Focus group surveys on iron and folic acid deficiency were conducted and based on the survey results educational materials have been developed; the knowledge, attitude and behavior of the risk groups and stakeholders regarding rabies was studied (Samegrelo, Kakheti); the attitude of the stakeholders towards introduction of a vaccination against rotavirus in the country was studied and an article was prepared based on the results; the information was communicated to various stakeholders and partners (incl. methodic manuals were prepared, workshops and conferences, and working meetings were conducted); an educational module was developed regarding the hand hygiene, immunization and tobacco; some educational interventions were implemented (public healthcare master's students, PHC employees and school medical personnel).
- Materials to celebrate various world/international days/weeks were prepared: World Cancer Day, World Oral Health Day, World Salt Awareness Week, World Hypertension Day, World Stroke Day, World Heart Day, World Diabetes Day, and the World Day of Remembrance for Road Traffic Victims, For Women's Health, For World's Health, No to Violence etc.
- Health promotion workshops were held (5 theoretical and one practical module) for students of the Faculty of Public Health of Tbilisi State Medical University (50 students) and the staff members of Public Health Centers (13 staff members).
- Children's rights at hospitals were assessed using the WHO instruments; grant "creation of the contributing environment for elaboration and introduction of an efficient tax policy in Georgia" was obtained; the project implementation will be funded by the "Blumberg Philanthropy" and supported by the World Lung Foundation and the International Union against Tuberculosis and Lung Disease.

VI. Strategic Priority 4: Capacity Development for Applied and Basic Biomedical and Biotechnology Research

Scientific studies are mostly performed at the Lugar Public Health Research Center, which has modern BSL-2 and BSL-3 laboratories; it is the only BSL-3 laboratory not only in Georgia but in whole Caucasian and central Asian region. All kinds of clinical and laboratory diagnostics and scientific research for which BSL-3 laboratory is required are performed at the Lugar Center. The Center has the Next Generation Sequencing equipment which allow for the unique opportunity of the genome testing in the whole region.

Virology and Molecular Biology

Testing of poliomyelitis and other enteroviruses

- Poliomyelitis and other enteroviruses are tested at the Lugar Center on test samples collected from patients with acute flaccid paralysis (AFP) that are registered in Georgia, as well as on test samples collected from similar patients entered from Armenia.
- Testing for enteroviruses was also performed on test samples collected from sewage and consumed waters in various districts (Tbilisi, Ajara, Borjomi, Telavi, Gori and Ozurgeti).

Results of testing performed on poliomyelitis and other enteroviruses

	Georgia			Armenia		Total AFP feces	Total positive feces
	AFP patient	Feces	Cerebrospinal Fluid (CSF)	AFP patient	Feces		
AFP	13	26		24	48	74	Total 3: NPEV – 1; ECHO30 - 2
Meningitis outbreak		57	182				Total 169: E30 – 50; NPEV – 117; E9 - 1; CVB4 - 1
Water specimens	92						Total 32: PV – 4; incl. PV1 – 1; PV2 – 3; NPEV - 28 (E30,E11)
Total 404 specimens							Positive - 204

- CSF and feces test samples of patients involved in a cerotic meningitis outbreak were also tested for enteroviruses. Virology tests for isolation of poliomyelitis and other enteroviruses were conducted using 3 types of cellular cultures.
- In total 404 test samples were tested at the polio and other enterovirus laboratory in 2014. Out of 404 samples 204 were tested positive, including for polio viruses and their subsequent tests proved their vaccine origination.
- In 2014 the Lab successfully (with 100%) completed proficiency testing provided by the WHO; in July the Lab received a training on diagnostics of poliomyelitis and other enteroviruses and successfully obtained the WHO accreditation.
- Testing of influenza and other respiratory viruses.
- In total 1,380 combined nasal and pharyngeal samples were received in 2014 for influenza and other respiratory viruses testing. Rapid PCR tests were run on all samples. Among them: A/H3 was confirmed in 243 cases; A/H1p – in 7 cases and type B influenza virus was confirmed in 24 cases.
- To detect other respiratory viruses, Real-Time Multiplex PCR were run on 600 samples; 319 samples were tested positive with the following proportion:
 - Respiratory syncytial virus A/B – 33;

- Rhinovirus – 133;
 - Coronavirus – 52 (HKU1 – 11, Cor 229 – 8, Cor 63 – 19; Cor 43 – 14);
 - Human metapneumovirus A/ B – 53;
 - Enterovirus – 25;
 - Adenovirus – 57;
 - Human bocavirus – 56;
 - Paraflu viruses – 20 (paraflu 1 – 1 sample, paraflu 2 – 1 sample, paraflu 3 – 10 samples, paraflu 4 – 8 samples);
 - Parechovirus – 3;
 - Micoplasma – 5.
- Real-time PCR was run on 10 samples received from the WHO for the laboratory Quality Control Assessment. The results are uploaded into the appropriate database.

Preparation/usage of tissue cultures

- In 2014 the work has been conducted on 7 kinds of cultures: RD; L20B; HEP-2; VERO E-6; VERO B-4; J-774; X-653. For this purpose media were prepared, cryoconservation of cells was performed; tissue cultures were frozen and grown and were transferred to the Polio and other Enteroviruses Lab.

Serology tests

- More than 18,000 serology tests were conducted during the reporting period. Below is the list of serology tests performed on test samples and the test results.

Program	Test type	Positive	Suspect	Negative	Total
Safe blood	HBsAg-ELISA	60		1,640	1,700
	HBsAg-confirmation (Pos. Donors)	26		34	60
	HCV-ELISA	128		1,572	1,700
	HCV-confirmation (Pos. Donors)	24		104	128
	HIV- ELISA			1,700	1,700
	TPHA			1,700	1,700
Testing of mothers and children	HBsAg-confirmation	433		29	462
	TPHA-rapid	3	5	6	14
	RPR-rapid			3	3
	HIV-rapid			2	2
State program on Acute Diarrheas	Rotavirus	46		210	256
	Adenovirus	29		522	551
	Norovirus	39		512	551
	Verotoxin Ag			251	251
Rotavirus infection test	Rotavirus-(WHO)	175		996	1,171
Pneumonia Investigation Program	Chlamydia pneumoniae-IgM	4	7	61	72
	Coxiella burnetti IgM	6	8	58	72
	Streptococcus Ag (urine)	12	6	34	52
	Brucella IgM	45	35	295	375
	Brucella IgG	106	41	228	375
	TG IgM			372	372
	TG IgG			372	372
	STG IgM	3		369	372
	STG IgG			372	372
	SFG IgM			372	372
	SFG IgG	30		370	372

GG21	Hanta IgM	21	50	304	375
	Hanta IgG	12	31	227	270
	TBEV IgG	15	29	130	174
	Leishmania Ab	12	5	157	174
	F. tularensis IgM	16	18	137	171
	Bartonella Henselae/Quintana IgG			68	68
	Ehrlichia muris IgG			24	24
	CCHF IgM	2		370	372
	CCHF IgG	20	4	348	372
HIV/AIDS State Program	HIV/AIDS test HIV- WB	168	10	117	295
GG19	F. tularensis Ab	11		227	238
	Brucella IgM			12	12
	Brucella IgG	3		9	12
	F. tularensis IgM	1		1	2
	F. tularensis IgG	1		1	2
	Coxiella burnetti II phase IgM	1	1	10	12
	Coxiella burnetti I phase IgG			12	12
Spread of Bartonella species in Georgia and study of its diversity in humans and animals G1683	Bartonella Henselae IgG	1		34	35
	Bartonella Quintana IgG	1		34	35
	Bartonella Tribocorum IgG			35	35
Incoming requests to NCDC&PH from various clinics	CCHF IgM	12	8	103	123
	CCHF IgG	8	5	30	43
	Hanta (puumala) IgM	9	24	60	93
	Hanta (puumala) IgG		3	34	37
	TBEV IgM			4	4
	TBEV IgG	1		2	3
	Leptospira IgM	73	13	175	261
	Leptospira IgG	1	4	52	57
	Brucella IgM	45	47	366	458
	Brucella IgG	114	20	281	415
	Borrelia IgM	57	17	64	138
	Borrelia IgG	15	6	47	68
	Q- fever IgM	13	9	62	84
	Q- fever IgG	6	1	39	46
	Rickettsia IgG		1	1	2
	Leishmania Ab	7	3	37	47
	HAV IgM	26		45	71
	Enterovirus IgM	2		14	16
	Enterovirus IgG			1	1
	Measles IgM	339	12	54	405
	Rubella IgM		1	69	70
	Measles IgG	28	3	11	42
	Rubella IgG	2		1	3
Total	18,604				
31					

- The measles/rubella laboratory group participated in a proficiency testing within the framework of the WHO's External Quality Control; the samples were also transferred to the Luxemburg Measles/Rubella Referral Lab for retesting. In both cases, as a result of testing and retesting, the Lab was assessed at 100% and the measles/rubella laboratory group obtained full accreditation in 2014.
- Within the framework of the WHO program – the Hospital-based Surveillance of Rotavirus Gastroenteritis and Definition of the Disease-caused Severity in Georgia, the Lab participated in a proficiency testing and was assessed at 90%. The samples were transferred to the Minsk Regional Rotavirus Laboratory for retesting; the retest results were 100% the same as test results.

Molecular biology

- anthrax
 - 84 samples of ulcer content cultured in broth were received for anthrax diagnostics; 84 real-time PCR tests were run for 2 markers – B. anthracis T2 and B. anthracis T3, BioFire Diagnostics, Inc. Genetic material of anthrax pathogen was identified in 30 clinical samples.
 - 9 tests were run on environmental samples: 3 received environmental samples tested negative for 2 anthrax genetic markers, and all of the 6 isolated cultures were confirmed.
- Poxvirus infections
 - To diagnose orthopoxvirus infection using the retrospective approach, 131 anthrax-negative DNA samples were tested with Real-Time PCR. The DNA extraction was performed on 35 poxvirus suspected clinical samples (swabs) received by the Center, which were subsequently tested with Real-Time PCR. Totally 201 tests were run.
 - To diagnose parapoxvirus infection using the retrospective approach, 130 anthrax-negative DNA samples were tested with Real-Time PCR. 58 out of 130 cases were tested positive for parapoxvirus infection.
 - The DNA extraction was performed on 5 poxvirus suspected clinical samples received by the Center, which were subsequently tested with Real-Time PCR. In 4 out of the 5 clinical cases parapoxvirus infection was confirmed; totally 140 reactions were run.
- Crimean-Congo Hemorrhagic Fever (CCHF)
 - In 2014, there was a CCHF outbreak in East Georgia. During the outbreak the Lugal Center received 66 clinical samples for testing and the CCHF RNA was identified in 10 test samples; phylogenetic testing was additionally performed on positive samples (clinical and environmental). Testing has not been finished; it will be continued using additional primers, which will allow for full consistent reading of the S-segment of the CCHF virus genome and for more precise and reliable phylogenetic testing. The testing was performed in collaboration with the UK's Public Health for England, and it's worth noting that the above testing is performed in Georgia for the first time, which significantly enhances the value of the scientific research data.
- Rabies
 - In 2014, 7 rabies suspected clinical cases were laboratory tested and rabies was laboratory confirmed in 4 cases.
 - For laboratory confirmation of rabies, the RNA was extracted from a patients saliva; a PCR was run followed by the nested PCR. For final diagnostics, molecular testing was performed with sequencing method.
- Brucellosis
 - In 2014, 9 new brucellosis cases were laboratory confirmed; for each case the DNA extraction was performed in BSL-3 lab; for confirmation, Real-time PCRs were run; for typing – AMOS PCR; also, a new typing method – Brucellader PCR – was introduced; the Brucellader PCR typing and validation of the new method was performed on 95 strains available in the NCDC&PH collection; in all 9 cases the SNP Real- time, MLVA 7 and MLVA 8 typing was performed.
- Tularemia
 - 432 specimens prepared from the spleen of ectoparasites and rodents of the field materials were tested for a tularemia causative agent. One specimen, which was prepared from D. marginatus species of ticks collected in Shida Kartli region, was tested positive for F. tularensis genetic marker.
- Malaria
 - In 2014, 6 malaria cases (P. falciparum) were laboratory confirmed with real-time PCR tests.
- Clostridium difficile
 - Fecal masses from 50 patients were tested for Clostridium difficile. The DNA was extracted from the fecal masses. PCR confirmed the existence of A, B and binary toxins. As a result of testing, 11

patients were diagnosed with a *Clostridium difficile*-associated disease.

- *Bartonella* spp.
 - 160 clinical samples, 65 rodent samples and up to 1,000 ectoparasite samples were tested with PCR method; PCR were run on 43 isolates derived from the samples.
- Toxigenic *E. coli*
 - For STEC diagnostics, the Lab received 95 samples of feces cultured in broth, on which 116 PCR tests were run for 4 markers: stx1, stx2, eae, Ehly. Various toxigenic markers of *E. coli* were detected in 32 clinical samples; 8 cultures were isolated; Detection of *E. coli* O104 specific markers (stx2, terD, rfbO104, fliC H4) were also introduced in the Lab.

PCR diagnostics of *Escherichia coli* toxigenicity markers (stx1, stx2, eae, Ehly)

Sample type	No of samples received	No of PCR positive samples	No of tests performed	Markers			
				stx1	stx2	eae	Ehly
Clinical sample (feces cultured in broth)	95	32	116	1	16	14	13
Cultures and isolates derived from clinical samples	173	51	177	0	40	11	16

Significant results achieved on the basis of scientific research:

- Component of the Global Disease Detection (GDD) project 5U19GH000963-02 “Surveillance of Acute Febrile Diseases” of the Centers for Disease Control and Prevention (CDC): “Improvement of Leishmaniasis Surveillance in Georgia”. In order to preliminarily identify human cases active surveillance was conducted in the foci, 500 test samples were collected from humans; further, Leishmaniasis suspected patients were diagnosed using PCR for free at the Tbilisi Institute for Tropical Medicine and Parasitology; Leishmaniasis carrier insects (mosquitos of *Phlebotomus* genus) were collected, their species were identified and PCR tested for Leishmaniasis; seroprevalence of 600 domestic dogs was tested. Cultures were isolated from clinical and environmental (dogs, phlebotomus) samples. Seroprevalence of reservoirs (house dogs) was tested. Positive samples (clinical and environmental) underwent additional phylogenetic test with Sanger Sequencing method. Similar testing on the above pathogen was performed in Georgia for the first time.
- Within the framework of the German-Georgian project “Establishment of the Biosafety and Extremely Dangerous Infectious Diseases Diagnostic Network in the South-West Asia” the following activities have been conducted: growth of a new cellular culture and leading of a cellular line at the laboratory; introduction of a molecular (PCR) method for the detection of cellular line contamination with mycoplasma; molecular diagnostic of anthrax (*B. anthracis*) with PCR method: validation and optimization of the method with TOPO-TA plasmid (dhp61): pre-sensitivity test, optimization of primers and probes, optimization of the Master Mix; a theoretical workshop together with practical training modules will be conducted on molecular diagnostics of anthrax (*B. anthracis*) and the cellular line contamination with mycoplasma. To support the National Action Plan for Preparedness and Response to Ebola Viral Disease and to enhance diagnostic capabilities, the Bundeswehr Institute of Microbiology purchased and donated to the NCDC the Ebola virus diagnostic kit: Filovirus Screen RT-PCR, Altona Diagnostics.
- Within the framework of the CRDF and WRAIR funded research – “Molecular Study of atypical Georgian *Brucella* isolates”, the full genomic DNA extraction of 4 *Brucella* strains and sequencing of a whole genome of the strains was performed on the Illumina platform at the Lugar Center. Bioinformatic analysis of the data obtained as a result of the sequencing, which was performed at the WRAIR, revealed that the strains belong to the genus *Ochrobactrum*; a publication on this is under preparation.
- Within the framework of the project – “Molecular Epidemiology of Multiresistant and Extensively Resistant Tuberculosis in Georgia”, a questionnaire was prepared to identify the risk-factors of morbidity with extensively resistant tuberculosis. Filling out of the questionnaire to identify the risk-factors of morbidity with extensively resistant tuberculosis began with 2 patient groups. 110 multiresistant strains of *M. tuberculosis* were selected for molecular tests; high molecular DNAs were isolated from *M. tuberculosis* cultures, which were stored in isopropanol, using chloroform isoamyl method.
- Within the framework of the genome center development and collaboration with Los Alamos National Laboratory (USA), the RNA sequencing was performed with a new generation sequencer for the first time.

The sequencing was performed on 5 clinical samples collected within the influenza surveillance program.

- Within the framework of the current CRDF project – “Characterization of the Coevolution Mechanisms of the Adaptive Bacteriophage and the Host Cell, and the Phenotypic Profiles Using a New Generation Sequencer”, a bacteriophage grown on 26 alternative hosts was identified with a new generation sequencer; the obtained results are being analyzed.
- Within the framework of molecular characterization of the anthrax and brucellosis strains stored at the repository of Kars University, Turkey (DTRA), 3 NCDC employees visited Kars University. They had meetings with the management of the Veterinary department and the Pathology department. A training was conducted for Turkish colleagues on safe handling of pathogens.
- Within the framework of the project – “Processes of Ageing-associated Visual Data Processing and Variations of the CHRNA7 Gene”, laboratory works have been completed; the results are being processed.
- Within the framework of the project – “Epidemiology of the Diseases Accompanied by Fever Caused by the Dengue Virus and Other Arboviruses in Georgia” (TAP 8, DTRA), a training was conducted on the arthropods surveillance issues; specimens of virus carrier ectoparasites were collected in various districts of Georgia (South Georgia and Ajara). The main vectors of Dengue virus and Chikungunya virus – *Aedes albopictus*, *Aedes aegypti* and *Culex pipiens* were identified in Georgia for the first time. Based on the results, a poster was presented at the Conference of the American Society of Microbiology on 11 February 2015.
- Emerging zoonotic pathogens in Georgian bats (G-2101, BTEP, ISTC). 180 bats of 8 different species were collected during 2014, including the migrating species; 9 different sample types were taken (in total 1,620 samples); the samples were tested for *Bartonella*, CCHF and MERS-CoV.
- Within the framework of the project – “Transmission of Zoonotic Influenza between Humans, Pigs and Poultry” (STCU, #5271), 524 samples from 318 patients were tested for the bird flu antibodies (A/H2N3, A/H5N1, A/H5N2, A/H6N8, A/H7N1, A/H7N7); 3,144 hemagglutination inhibition tests were run. Further, the RNA was extracted from samples collected from 64 poultry and 49 swine, and the reverse transcription real-time PCR was run for the detection of influenza virus. All samples were tested negative for influenza A.
- Within the framework of the project – “Investigation of Influenza in Domestic Animals in Georgia” (CRDF Global, GRDF), 4 field visits were conducted, during which 43 villages were visited. 86 samples were taken from 57 domestic animals (31 chickens and 26 pigs) of 28 farms; RNA was extracted; real-time PCR was run. All samples were tested negative for viruses.
- Within the framework of the GG19 project experiments were performed. The goal of the experiments was the invasive testing of *F. tularensis* using mouse macrophages (J774) according to the standard SOPs.
- Within the framework of the GG23 project: creation of the stable immunodiagnostics; trainings were conducted.
- 9 new projects were prepared in 2014.

Biosafety and tests on extremely dangerous pathogens

- Existence of the mosquito *Aedes albopictus* – a vector of dangerous arboviral diseases (dengue, chikungunya) was determined for the first time in Georgia, and after a long period (60 years), the spread of the mosquito *Aedes aegypti* – a carrier of Yellow fever, West Nile fever and other diseases was confirmed again.
- A causative agent of CCHF was identified in *Rhipicephalus sanguineus* species of ticks for the first time in Georgia.
- A human tularemia case was identified for the first time in Tbilisi.
- All components for the laboratory diagnostics of viral hemorrhagic fevers are fully functioning within the BSL-3 laboratory space of the Lugar Center.
- Permanent on-duty divisions of the field teams for laboratory diagnostics of Ebola within the BSL-3 space and for the Ebola case response were established at the Lugar Center.
- The AMR (Antimicrobial Resistance) Reference Lab of the WHO and the National AMR Network were established.
- The AMR National Conference was held for the first time.
- The population survey of the AMR spread at central and local levels was conducted for the first time.
- PACS- RFID pilot project was implemented at the Lugar Center’s National Repository for Bacteria and Viruses for the first time.
- GIS maps were built on the basis of the historical (passport) data of EDPs stored at the National Repository.
- BSL-3 trainers were trained.
- Complex Standard Action Procedures for visiting a patient were developed/elaborated together with the EDP Epidemiologic Surveillance, Regional Public Health Management department and Battelle specialists.

Biosafety

The following educational and control measures were performed during the reporting period:

- 110 employees of the Center's laboratory and epidemiology service that are working in high-risk areas were undergone medical examination.
- Monthly scheduled checkups were conducted in the Center's BSL-2+ laboratories (4 lab spaces) and BSL-3 laboratories (1 lab space).
- 7 scheduled checkups were conducted for the lab refrigerators and incubators (64 refrigerators and 21 incubators).
- Waste disposal in autoclaves inside the laboratories and its subsequent incineration was regularly monitored.
- Biosafety/biosecurity was regularly monitored at the National Repository for Bacteria and Viruses.
- Lab personnel was regularly monitored that they observe safe working procedures.
- The general procedural chain of clinical and environmental samples movement was regularly monitored for all laboratories within the Lugar Center.
- New SOPs were developed and revised; comments made on transportation SOP were reviewed; electronic versions of the NCDC's General Biosafety SOPs were sent out to the regional laboratories (2 ZDLs and 7 LSSs).
- Group members participated in the elaboration of a document on the biological risk management system, which was organized by Kuratsio (8 working meetings)
- Training on Ebola response (a one-day table-top exercise) was conducted. Representatives of the NCDC&PH, the Ministry of Defense, the Revenue Service, the Customs and Patrol Police participated in the training (in total 43 participants).
- A 5-day training on biosafety issues was conducted for persons on the internship (6 trainings);
- A respirator fit test was conducted for employees of the regional laboratories (23 specialists) and the Lugar Center employees (45 specialists).
- Training "on observance of the biosafety rules when visiting patients with an extremely dangerous infection" was conducted for ZDL and LSS personnel.
- An exercise "on observance of the biosafety rules when visiting patients with an extremely dangerous infection" was conducted for ZDL and LSS personnel.
- Necessary information was prepared for the Biosafety Training Center web-site.
- 49 acts for transferring samples and cultures out of the Lugar Center were drawn up.
- The biosafety group was participating in the quality control system operations.

The EDP Analysis

- Natural foci of tularemia were investigated; bacteriology tests were performed on EDP causing pathogens such as *Y. pestis*, *F. Tularensis*, *Brucella*, *B. Anthracis*;
- With bacteriology and serology methods, clinical samples from medical institutions throughout the country were tested at indication and identification levels, total of 558 samples, including: blood and blood serum – 425 (for tularemia – 26, brucellosis – 358, pseudotuberculosis and intestinal yersiniosis – 11, botulism – 5, anthrax – 2, bartonella – 23), samples from body lesions – 123 (for anthrax – 100, bartonella – 23), urine and other discharges – 10 were tested for botulism.
- With bacteriology method, environmental samples were tested at indication and identification levels, total of 3,382 samples, including: from ectoparasites – 1,606 (2,937 pcs.), from rodents – 700, soil – 511, jams and preserves – 12 for botulism, other animals – 437 and water – 116 for legionella. A sample of suspected powder received from the US embassy was tested for EDPs with a bacteriology method.
- As a result of performed activities:: 11 anthrax cultures were isolated; 26 anthrax PCR positive results were obtained; 1 culture of botulotoxin type B was isolated, 1 botulism seropositive type E sample, 1 tularemia seropositive sample, 10 brucellosis cultures, 13 seropositive results for brucellosis were obtained, 11 *Bartonella* spp cultures were isolated from cattle blood, 4 *Bartonella* spp cultures were isolated from a dog's blood, 10 *Bartonella* spp cultures were isolated from a rodent's heart, a rodent's heart was positive for *Bartonella* spp in 3 samples just with PCR test.
- The "Biosafety Standard Operation Procedures for Cases Caused by the EDPs (before and after Sample Collection)" and Laboratory Test Request Forms were developed and finalized; hemorrhagic fever response teams were set up and equipped; the NCDC&PH, LMA and G. Eliava Institute of Bacteriophages, Microbiology and Virology staff were trained for working in a BSL-3 laboratory; the NCDC employees were trained as BSL-3 laboratory trainers; brief field exercises of the TADR system evaluation and trainings on sample collection, packing, transportation and reception were conducted at regional laboratories.

Bacteriology tests

- 1,786 samples were tested: feces – 772 samples, blood – 731 samples; CSF – 150 samples; urine – 16; sputum – 34, corpse material – 27 samples, different samples for diseases of unknown etiology – 56. 67 samples were rejected. Reasons for the sample rejection were communicated to epidemiologists.
- 12 standard operational procedures (SOPs) were written.
- Existing laboratory network was inspected and the needs for the network were identified; working on translation of the Quality Manual into Georgian language is in progress.
- One CLSI standard of the Quality Management System was translated from English into Georgian; within the framework of the antibiotic resistance program, guidelines and 4 documents have been translated: CAESAR guidelines, tables of working standards, EUCAST guidelines for detection of resistance mechanisms and expert rules.
- Participation in external quality control arranged by the National Food Agency concerning the testing of water and food samples, as well as participation in the external quality control arranged by the WHO (6 causative agents were identified, and antibiotic susceptibility test was performed).
- External quality control arranged by the WHO concerning identification of the species of pathogens causing intestinal infections and performance of the antibiotic susceptibility test is in progress. Working process was suspended due to lack of diagnostic serums.
- Media required for bacteriology tests were prepared for the Center and regional labs (Telavi, Gori).
- In Dedoplistskaro Public Health Center, all positive and negative preparations that were stored at the PHC laboratory were verified for malaria; methodic and practical assistance was rendered to the lab assistant; preparations were sorted out; log books were inspected.
- According to component C1 of the project – “Improvement of Leishmaniasis Epidemiologic Surveillance in Georgia”, for preliminary detection of human cases, 510 blood test samples were collected in Kvareli and Sagarejo.
- Posters on the laboratory tests for anthrax, brucellosis and botulism were prepared.

Zoology and entomology tests

- Within the framework of the Epidemiologic Surveillance Program, 12,495 ha area was examined in the natural foci of extremely dangerous infections. Cattle (1,218 head) were checked for ticks and 1,603 Ixodes ticks were collected. 850 Ixodes ticks were collected by way of dragging flannel flags on the ground. 760 soil samples were tested for a causative agent of anthrax.
- Within the framework of the GG-19, Tap-8, and GDD programs, 2,550 ha area was examined. 1,308 rodents were tested; 6,148 Ixodes ticks were collected from the ground surface; 5,871 Ixodes ticks were collected off the cattle. 389 rodent nests were collected and 1,310 fleas and 731 Gamazidae ticks were caught.
- Under the Service Agreement signed between MediClubGeorgia and the Center, 420,800 ha open site and 18,400 m² closed site were investigated. 2,836 Ixodes ticks were collected from the ground surface; 1,752 head of cattle was checked, 3,777 ticks were collected. 555 soil samples were tested for a causative agent of anthrax.
- 805 water reservoirs were registered and certified in hypermalaria areas. 1,426 pre-imago phase malaria and non-malaria mosquitos were caught and identified, including 685 An. Maculipennis.
- Based on performed tests, the spread of Aedes albopictus was determined for the first time in Georgia, and after 60 years, the spread of Aedes aegypti was confirmed again.
- Within the framework of the project – “Biology and Control of the Transmissible Infections in Europe”, 511 pcs. of Phlebotomus were collected and tested: P. saergenti, P. kandelakii, P. Balkanikus, P. Halepenisis.
- Within the framework of the project – “Investigation of Zoonotic Pathogens in Widely Spread Bats in Georgia”, 250 bats were caught and tested.
- 54 disinsecting product registration documents were inspected and 54 registration applications were responded.
- The following documents were developed: SOPs for catching pre-imago phase mosquitos; SOPs for collecting adult mosquitos; SOPs for catching pre-imago phase mosquitos in water; SOPs for catching pre-imago phase mosquitos in small size water reservoirs (including, water in a tree hollow); electronic versions of entomology tables; a table for the registration and certification of water reservoirs; a table for registration of number of pre-imago phase mosquitos in control water reservoirs; a table for registration of number of adult mosquitos in control day-stay units.

The National Repository for Bacteria and Viruses

- 76 strains, including 12 EDP strains, were received in the Repository, were registered in the Pathogen Asset

Control System (PACS), aliquots were prepared in cryovials and were placed for storage at -80° C.

- Bactericidal effect of 77 disinfectants provided by various organizations was checked; 144 assays were performed.
- Tularemia antigen was prepared and transferred to the EDP Lab for tularemia microagglutination test; EDPs as well as other pathogens were prepared and transferred to the Center's laboratories in different times; further, 27 non-EDP strains were transferred outside the Center. For internal quality control reasons, bactericidal effect of the disinfectants used at the Lugar Center was checked.
- Biochemical property tests for carbohydrates were performed on 40 strains of the isolated plague causative agent – *Y. pestis* collection in Georgia, which is stored at the Repository – 160 tests.
- Other pathogenic strains and *H. pylori* bioplates stored at -80° C in the NCDC&PH Laboratory on Asatiani str. were transferred to the BSL-2 repository in the Lugar Center.
- SOPs for Determining Bactericidal Effect of Disinfectants and application forms were developed.
- Participation in a DTRA's pilot project for the integration of two electronic software – the Pathogen Asset Control System (PACS) and Radio Frequency Identification technology system (RFID).
- Based on the IATA international and internal regulations, assessment of the risk category for the inbound and outbound cargos containing biological material was conducted.
- Introduction of the methodology for Investigation of the Invasive Properties of Cells is in progress.
- Work has been started to map the data using GIS on the basis of the registration data of strains stored at the Repository, and accordingly, to analyze the spread of disease causative agents and their reservoirs and vectors in Georgia.

Test sample reception and processing at the Center

- During the reporting period, 19,017 samples/specimens of human, and environmental samples, genetic material and bacteriology cultures were received and registered by the sample reception section of the Center. Out of the total quantity, 16,750 were human samples/specimens, 24,863 – environmental samples/specimens, 223 samples/specimens were bacteriology cultures and 69 – genetic samples.
- Quantity of material received through scientific projects is 14,279 samples/specimens, and the quantity of material received through the State Epidemiologic Surveillance project is 2,471 samples/specimens.

Joint activities

- The whole genome sequencing of 6 strains of *F. tularensis* isolated in Georgia was performed at WRAIR, Washington, on Roche 454 platform.
- During participation in field works organized by the Bundeswehr Institute of Microbiology in Munich, Germany, experience in conducting field works was shared: during 5 days, in a forest, 240 km away to the West from Munich, rodents Caught in the field were dissected and the necessary organs were collected by observing all biosafety rules, and Hanta virus was identified using specific molecular markers. In total 29 rodents were caught and 3 of them were positive for Hanta virus markers; the obtained results were processed and interpreted.
- At CLC Bio Workshop – training on bioinformatics (Santa Fe, Los Alamos, USA), the data sequenced at the NCDC&PH was processed using the bioinformatics software for further analysis.

Proficiency testing

- Lugar Center's Serology Laboratory (Measles/Rubella and Rota viruses groups) received 100% score (Measles/Rubella group) and 90% score (Rota viruses group) in proficiency testing;
- Poliomyelitis and other enteroviruses laboratory successfully completed (100% score) the proficiency testing sent by the WHO.

Accreditation

- The WHO granted full accreditation to the Georgia's Polio Laboratory by 2015.
- Various international accreditations/certifications obtained by the Lugar Center and its participation in EQA:
 - Due to relocation of the Center's laboratories, re-accreditation of Influenza, measles/Rubella and Polio laboratories by the WHO;
 - Rota viruses, AMR, Invasive Meningitis laboratories participate in the WHO European Network for External Quality Control (EQA);
 - Our laboratory is a member of Salmonella Global Network and participates in EQA.
- Malaria investigation EQA joint certification by the WHO and Bulgaria Medical Parasitology Center.

In 2014, there were 57 ongoing projects/programs/grants at our Center:

1. **“Transmission of zoonotic influenza between humans, pigs and poultry”**; STCU #5271; Project duration: **01.01.2012 – 31.12.2014**;
2. **“Epidemiology of *Clostridium difficile*- associated disease in Georgia”**; BTEP/ISTC, G-1759; Project duration: 01.12.2013 – 31.05.2016;
3. **“Patterns of HIV drug resistance and molecular epidemiology of HIV in Georgia”**; BTEP/ISTC, G-2103; Project duration: 01.02.2014 – 31.07.2015;
4. **“Establishment of national sentinel-side, laboratory-based Salmonella surveillance system and outbreak response capacity for enhanced of foodborne disease in the Republic of Georgia”**; BTEP/ISTC, G-1462 (BTEP # 119); Project duration: 01.04.2013 – 31.12.2014;
5. **“Molecular Epidemiology of Multidrug Resistant and Extensively Drug Resistant Tuberculosis in country of Georgia”**; BTEP/ISTC, G-2100, Project duration: 01.02.2014 – 31.01.2015;
6. **“Molecular Epidemiology of Toxigenic *Escherichia coli* in country of Georgia ”**; BTEP/ISTC, G-2099; Project duration: 01.03.2014 – 01.09.2015;
7. **“Distribution and diversity of Bartonella pathogens among people and animals in Georgia and evaluation of factors associated with the emergence of bartonellosis”**; BTEP/ISTC, G-1683; Project duration: 01.12.2013 – 31.05.2015;
8. **“Emerging zoonotic pathogens in Georgian bats”**; BTEP/ISTC, G-2101; Project duration: 01.02.2014 – 01.08.2015;
9. **“Development of Surveillance System and Control Strategy for Leishmaniasis in Georgia by means of Epidemiological and Strengthening of Laboratory capacities”**; BTEP/ISTC, G-1081(BTEP # 89); Project duration: 01.04.2014 – 31.12.2014;
10. **“A-multi-task investigation on the human immune response to anthrax aimed at developing more effect vaccines”**; NATO SFPP 984208; Project duration: 13.02.2013 – 13.02.2016;
11. **“Enforcement of 100% smoke-free policy in healthcare institutions and secondary schools of Georgia”**; The International Union Against Tuberculosis and Lung Disease, Inc., (The Union – North America); Project duration: 01.02.2012 – 31.01.2014 (No cost extension till 01.07.2014);
12. **“Surveillance on Bacterial Meningitis and Disease Burden Estimation Georgia”**; WHO; Project Duration: 15.04.2014 – 31.12.2014;
13. **“Hospital-based sentinel surveillance of rotavirus gastroenteritis and evaluation of disease burden in Georgia”**; WHO Project duration: 01.11.2006 – 01.12.2014;
14. **“Sustaining influenza surveillance networks and response to seasonal and pandemic influenza by national health authorities outside the united states”**; (403-568), CDC, USA; Project duration: 09.29.2013 – 09.29.2016;
15. **“Support of Flea Borne Disease Surveillance Diagnostics and Response”**; Global Disease Detection Project component (647), CDC, USA; Project duration: 01.09.2013 – 30.09.2014;
16. **“Launching a National Anthrax Control Program”**; Global Disease Detection Project component (644), CDC, USA; Project duration: 01.09.2013 – 31.08.2014;
17. **“Hospital-Acquired Infections and Antimicrobial Resistance”**, Global Disease Detection, CDC, USA; Project duration: 01.09.2013 – 31.08.2014
18. **“Novelties in TB Diagnostics” – “Surveillance of M/XDR TB who defaulted from treatment”**; Global Disease Detection (648), CDC, USA; Project duration: 01.01.2014 – 28.08.2014.
19. **“Surveillance work on acute febrile illness (AFI)”**; Global Disease Detection (GDD) project component (C1), CDC,USA; Project implementation timeline: 01.09.2013 - 28.08.2014;
20. **“Strengthening hepatitis surveillance”**; Global Disease Detection (GDD) project component (646), CDC, USA; Project Duration: 01.01.2014 – 31.08.2014;
21. **“Strengthening Lab Capacity throughout the National System”**; Global Disease Detection (642), CDC, USA; Project duration: 01.12.2013 – 31.08.2014;
22. **“Improving the National Immunization Program”**; Global Disease Detection (643), CDC, USA; Project duration: 01.09.2013 – 31.08.2014;
23. **“Rabies Diagnostics and Enhanced Surveillance in the Republic of Georgia”**; Global Disease Detection; Project duration: 01.09.2013 - 31.08.2014
24. **“Acute Fever Infection Surveillance in Georgia”**; WRAIR; Project duration: 25.04.2013 – 31.12.2014;
25. **„Biological threat Reduction Program“**, DTRA; Project duration: **01.01.2011 – 31.12.2015**;
26. **“Epidemiology and Ecology of Tularemia in Georgia”**; GG-19, CBR/DTRA; Project duration: 11.07.2013 – 11.07.2016;
27. **“Human Disease Epidemiology and Surveillance of Especially Dangerous Pathogens in Georgia”**, CBR/DTRA, GG-21; Project duration: 21.05.2014 – 30.06.2017;
28. **“Creation of Sustainable Immunodiagnostics”**; GG-23, CBR/DTRA; Project duration: 16.05.2014 – 01.01.2016;
29. **“Severe Acute Respiratory Infection and Community Acquired Pneumonia Surveillance Study in Georgia”**; University of Florida; Project duration: 01.10.2013 – 30.09.2014;
30. **“Biology and control of vector-borne infections in Europe”**; FP7-HEALTH-2010-single-stage EDENext; Project duration: 01.01.2011– 31.12.2014;
31. **“Anthrax Environmental Decontamination Network or “AEDNet”**; FP7 -PEOPLE-2013-IRSES, Project Number: 612309, Duration of the project: 48 months (01.01.2014 – 31.12.2017);

32. **Project C4 – “Bio-safety and bio-security risk management for Georgia”**; EU/UNICRI, C4; Project Duration: 15.08.2013 – 15.08.2015;
33. **“Establishment of Regional Training and Resource Centre in Biosafety, Biosecurity and Laboratory Management in the South Caucasus”**; EU/UNICRI, Project B1; Project Duration: 15.08.2013 – 15.08.2015;
34. **“Tobacco Survey in Georgia”**; Rollins School of Public Health, Department of Behavioral Sciences and Health Education; Project duration: 01.10.2013 – 31.08.2014.
35. **“Global Youth Tobacco Survey”**; WHO; Project duration: 21.11.2014 – 30.08.2014;
36. **“Polio Environmental Surveillance in Georgia in 2014”**; WHO; Project duration: 10.04.2014 – 31.12.2014;
37. **“Target spending of funds for Introduction Pneumococcal vaccine in Georgia”**; GAVI; Project duration: 14.06.2014 – 31.07.2014;
38. **“Evaluation of the Polio / AFP surveillance system”**; WHO; Project duration: 28.04.2014 – 02.05.2014;
39. **“Global Analysis and Assessment of Sanitation and Drinking Water ((Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS))”**; UN/WHO; Project Duration: 30.09.2013 – 15.06.2014;
40. **“Further evaluation of the implementation of the Rotavirus vaccine in Georgia”**; WHO; Project duration: 24.03.2014 – 31.03.2014;
41. **“Aging related genetic polymorphisms of CHRNA7 gene and processing of visual information”**; Rustaveli Foundation for Young Scientists; Project duration: 24.12.2013 – 24.12.2014;
42. **“Characterization of mechanisms of adaptive phage-host co-evolution using next generation sequencing and phenotypic profiling”**; GRDF; Project duration: 01.08.2013 – 31.08.2015;
43. **“Supportive Immunization Activities against the Measles Outbreak”**; as of the Decree of Government of Georgia (#1008, 30.07.2013), WHO; Project duration: 07.10.2013 – 31.01.2014;
44. **“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 in Georgia”**; The Global Fund to fight AIDS, TB and Malaria; Project Duration: 01.04.2014-31.12.2015;
45. **“Sustaining Universal Access to Quality Diagnosis and Treatment of All Forms of TB Including M/XDR-TB”**; The Global Fund, Project duration: 01.04.2014 – 31.06.2016;
46. **“International Lead poisoning Prevention Week in Georgia”**; WHO/Euro; Project Duration: 16.09.2013 – 28.02.2014;
47. **“Laboratory study of Measles/Rubella”**; WHO; Project Duration: 01.01.2002 – 31.12.2015;
48. **“Using Geographic Information Systems (GIS) at Spatial Epidemiology & Ecology Research Laboratory (SEER Lab) at the University of Florida, USA”**; CRDF Global, GRDF; Project Duration: 27.05.2014 – 27.01.2014;
49. **“Dengue Virus Ecology and Epidemiology of Dengue Infection in Georgia”**; TAP 8, DTRA; Project duration: 01.04.2014 – 01.04.2015;
50. **“Establishment of a Southwest-Asian network for biosecurity and diagnosis of dangerous infectious diseases”**; German Federal Foreign Office, Bundeswehr Institute of Microbiology (BwIM); Project duration: 29.08.2014 – 31.10.2016;
51. **“Influenza Study of Backyard Animals in Georgia”**; CRDF Global, GRDF; Project duration: 01.11.2014– 30.04.2015;
52. **“Collaboration to Enhance MDR-TB Surveillance using the Xpert™ MTB/RIF Assay and Color Test in Diverse Settings”**; US Armed Forces Health Surveillance Center; Project duration: 15.04.2014-31.03
53. **“Kafkas University Partnering for Molecular Epidemiology of B. anthracis and Brucella species in Turkey”**; TAP 712012; DTRA; University of Kafka ; Project duration: 21.10.2014– 21.10.2015;
54. **“Microbiological Monitoring of Uranium-Contaminated Environments”**; ISTC; KR- 2088; Project duration: 01.01.2015– 01.07.2015;
55. **TAP 6 – „Atypical *Y. pestis* Strains Isolated from Natural Foci in Georgia from Proteome to Virulence and Gene Expression”**; TAP 6; DTRA; Project duration: 01.01.2014 – 01.01.2015;
56. **“Bioethic and Clinical Leadership of Union Graduate College”**; Bioethic and Clinical Leadership of Union Graduate College; Project duration: 01.10.2014 – 03.09.2015;
57. **“The development of human resources and expert capacity in the field of addictology (trans-disciplinary addiction science) via university – level and life-long education in the Republic of Georgia”**; TEMPUS, EC; Project duration: 01.07.2014 – 30.11.2016.

Some particular results obtained during implementation of the non-State funded projects at the NCDC&PH premises in 2014:

- From a patient’s clinical sample (a lymph node punctate) suspicious for Cat Scratch Fever, *Bartonella* species was isolated, which is similar to currently known 2 *Bartonella* species – *B. tribocorum* and *B. elizabethae* and almost identical to the unique strain isolated from a rat in Israel. The mentioned species was not known before in the world’s scientific literature as pathogenic for humans;
- First time *Janibacter* spp. was isolated from the heart valve sample (during endocarditis);
- The first CCHF case was confirmed in West Georgia (Bagdati region) and CCHF vector ticks, *Rhipicephalus sanguineus*, were detected in the country;
- A human Tularemia case was identified for the first time in Tbilisi;
- Existence of *Aedes albopictus* mosquito was confirmed for the first time and after a long period (60 years)

existence of *Aedes aegypti* was confirmed in West Georgia;

- Bacteria of *Ochrobactrum* genus was described in Georgia for the first time;
- Circulation of Parapox viruses was confirmed in the country;
- the whole genome sequencing of 4 Georgian *Brucella* strains was performed;
- GIS maps were created based on the historical (passport) data of the EDPs deposited in the National Repository;
- An article was accepted for publication in one of the highly rated medical journals in the world, *New England Journal of Medicine* (about the discovery of a Novel Orthopox virus), with the Center's staff as coauthors.

During projects/programs/grants, the Center's specialists learned new methods of investigation:

- Diagnostics of arboviruses;
- New methods of antigen preparation;
- the latest methods for collection and testing of bats;
- Different methods for analyzing and processing the sequencing results of the bioinformatics program;
- Isolation of bacteriophages from the environment samples, study of their lytic spectrum on anthrax strains, study of microcosms.
- Molecular biology optimization methods; creation of positive control by molecular cloning method; diagnostics of Ebola virus in field conditions; basic regulations and safety standards of genetic engineering;
- Study of the basic concepts of GIS, technology and GIS software operation skills (ESRI ArcGIS v.10.1 desktop); received ESRI ArcGIS v.10.2 desktop with a 1 year license.
- Study of computer application GARP using the GIS software operation skills.

The following methods have been introduced in the laboratory practice:

- Molecular methods for detection of Orthopox and Parapox viruses;
- Leishmaniasis detection with Nested PCR;
- Filovirus detection with PCR, Filovirus Screen RT-PCR, Altona Diagnostics (Ebola, Dengue);
- RNA sequencing on Next Generation Sequencer;
- Molecular methods for *Mycoplasma* contamination detection in Cell cultures;
- Procedures for optimization and validation PCR diagnostic assay;
- New cell culture methods;
- Real-time PCR for Enterovirus detection;
- Sanger sequencing of CCHF causative virus;
- Sanger sequencing of Leishmaniasis causative parasites;
- Laboratory diagnostics of viral hemorrhagic fevers have been introduced within Lugar Center's BSL-3 laboratory environment.

In 2014, the Center's employees were working on 17 theses to obtain the doctor's academic degree – one is approved and ready to be defended.

1. E. Zhgenti: subject – “Molecular characterization of the widely spread in Georgia *Yersinia pestis* strains and identification of virulence determinants”; Academic Advisors: Merab Kekelidze, Revaz Solomonias.
2. A. Machabishvili: subject – “Circulation of influenza viruses in Georgia, their epidemiologic significance and molecular biology”; Academic Advisor: Paata Imnadze.
3. M. Elashvili: subject – “Organization of epidemiologic surveillance of meningococcal infections in Georgia”; Academic Advisors: Paata Imnadze, Irakli Mchedlishvili.
4. T. Ghaniashvili: subject – “Epidemiologic surveillance of salmonellosis in Georgia”; Academic Advisor: Shota Tsanava, Consultant: Guram Katsitadze.
5. G. Babuadze: subject – “Comparative molecular and biological characterization of medication resistant and non-resistant (sensitive) strains of Leishmaniasis parasites existing in Georgia”; Academic Advisors: Paata Imnadze, Merab Kekelidze, Revaz Solomonias.
6. M. Ramishvili: subject – “Molecular and genetic study of *Br.melitensis* strains isolated in Georgia”; Academic Advisor: M. Natadze.
7. K. Sidamonidze: subject – “Molecular epidemiology of Brucellosis in Georgia”; Academic Advisors: Nino Trapaidze, Shota Tsanava.
8. E. Khmaladze: subject – “Individual questions of Hepatitis B epidemiology in Georgia”; Academic Advisor: Shota Tsanava.
9. E. Elashvili: subject – “Tularemia in Georgia”; Academic Advisors: Davit Gelovani, Paata Imnadze.

10. N. Mamuchishvili: subjects – “Spread of Leptospyrosis in Georgia and its epidemiologic specifics”; Academic Advisors: Paata Imnadze, Irakli Mchedlishvili.
11. S. Saghinadze: subject – “Anti-Anthrax immune response in humans”; Academic Advisors: Shota Tsanava, Nino Trapaidze.
12. L. Urushadze: subject – “Molecular and epidemiologic characterization of Rabies virus in Georgia”; Academic Advisor: Revaz Solomonias.
13. M. Zakalashvili: subject – “Relationship between the HBV genotyping, virus concentration and Fibroscan data”; Academic Advisors: Nana Koshoridze, Merab Kekelidze.
14. R. Sukhiashvili: subject – “Molecular typing of the Rickettsia species with different molecular methods”; Academic Advisors: Kekelidze Merab, Koshoridze Nana.
15. L. Shengelia: subject – “Development of the health care private sector in Georgia: challenges and opportunities (effect of disastrous medical expenses on the use of services)”; Academic Advisors: Wim Groot, Professor of Maastricht University and Milena Pavlova, Associate Professor of Maastricht University.
16. K. Zaridze: subject – “Assessment of the current situation in Georgia in terms of biosafety and biosecurity and, based on the assessment, recommendations for the establishment of the unified approach”; Academic Advisor: Tengiz Verulava, Doctor of Medicine, Professor.
17. N. Gabriadze: subject – “Influence of manganese on children and young population in high risk regions of Georgia, its hygienic evaluation and forecast of its remote implications”; Academic Advisors: M. Giorgobiani, Associate Professor in the Department of Preventive Medicine and Environmental Health at Tbilisi State Medical University.

In 2014, the Center’s specialist D. Baliashvili was completing a master’s program “Master of Science in Clinical Research” to obtain a master’s degree at Emory University, Atlanta, GA, USA. The master’s work was on the investigation of contacts of persons with tuberculosis. The work was finished at the end of 2014 and a master’s degree of Emory University was obtained.

Awards

- On 23 April 2014, an annual scientific forum was held at Ivane Javakhishvili Tbilisi State University in memory of Ivane Javakhishvili to celebrate the 138th anniversary of the scientist. Dr. Paata Imnadze, deputy director of NCDC in Scientific field, received a certificate and an award for the submitted work;
- Ilia State University, with the Basisbank support, established an award for the best article. A Center staff member, G. Babuadze received the first “Pascal Prize” for his article - “Epidemiology of visceral leishmaniasis in Georgia”, which was published in one of the most prestigious and high Impact Factor international journal (PLOS Neglected Tropical Diseases, Ipm. 4.72);
- The poster “HIV Transmission from Remunerated Blood Donor (RBD) to Recipients in Georgia in 2012” presented by the
- Center’s chief specialist I. Burjanadze, was recognized for the quality of the poster and its educational value and received the second prize of the best posters at the 14th International congress of International Federation of Infection Control (IFIC) held in Malta on 12-15 March, 2014.

Publications

In 2014, the NCDC&PH specialists published 15 scientific articles, 34 abstracts; different types of publications – 19 units (including educational) and 7 “Epidemiologic Bulletin”.

Articles

1. Ian Kracalik[†], Lile Malania¹, Nikoloz Tsertsvadze, Julietta Manvelyan, Lela Bakanidze, Paata Imnadze, Shota Tsanava, and Jason K. - The Article “**Human Cutaneous Anthrax, Georgia 2010–2012**”, Blackburn Emerging Infectious Disease Journal, 20, Number 2–February 2014.
2. Chkhartishvili N., Sharvadze L., Chokoshvili O., Bolokadze N., Rukhadze N., Kempker R., Gamkrelidze A., Dehovitz J., Del Rio C., Tsertsvadze T. - The Article “**Mortality and causes of death among HIV infected individuals in the country of Georgia: 1989 – 2012**”, AIDS Res Hum Retroviruses. 2014 Jan 28. [Epub ahead of print], PMID: 24472093 [PubMed - as supplied by publisher] Related citations.
3. Giorgi Babuadze, Jorge Alvar, Daniel Argaw, Harry P. de Koning⁵, Merab Iosava, Merab Kekelidze, Nikoloz Tsertsvadze, David Tsereteli, Giorgi Chakhunashvili, Tamar Mamatsashvili, Nino Beria, Irine Kalandadze, Mikhail Ejov, - The Article “**Epidemiology of Visceral Leishmaniasis in Georgia**”, PLOS Neglected Tropical Diseases | www.plosntds.org; March 2014 | Volume 8 | Issue 3 | e2725.
4. A. Aikimbayev, D. Briggs, G. Coltan, B. Dodet, F. Farahtaj, P. Imnadze, J. Korejwo, A. Moiseieva, N. Tordo, G. Usluer, R. Vodopija, N. Vranjes - The Article “**Fighting Rabies in Eastern Europe, the Middle East and Central Asia – Experts Call for a Regional Initiative for Rabies Elimination**”, J. Zoonoses and Public Health, 2014, 61, pp.219-226.

5. **Ekaterine Khmaladze**, Dawn N. Birdsell., Amber A. Naumann, Christian B. Hochhalter, Meagan L. Seymour, Roxanne Nottingham, Stephen M. Beckstrom-Sternberg, James Beckstrom-Sternberg, Mikeljon P. Nikolich, **Gvantsa Chanturia**, **Ekaterine Zhgenti**, **Mariam Zakalashvili**, **Lile Malania**, **Giorgi Babuadze**, **Nikoloz Tsertsvadze**, **Natalia Abazashvili**, **Merab Kekelidze**, **Shota Tsanava**, **Paata Imnadze**, Holly H. Ganz, Wayne M. Getz, Ofori Pearson, Pawel Gajer, Mark Eppinger, Jacques Ravel, David M. Wagner, Richard T. Okinaka, James M. Schupp, Paul Keim, Talima Pearson **Phylogeography of *Bacillus anthracis* in the Country of Georgia Shows Evidence of Population Structuring and Is Dissimilar to Other Regional Genotypes**", PLOS ONE, www.plosone.org, 1 July 2014, Volume 9, Issue 7, e102651, 1-5p.
6. Se Hun Gu, Burton K. Lim, Blaise Kadjo, Satoru Arai, Jeong-Ah Kim, Violaine Nicolas, Aude Lalis, Christiane Denys, Joseph A. Cook, Samuel R. Dominguez, Kathryn V. Holmes, **Lela Urushadze**, **Ketevan Sidamonidze**, **Davit Putkaradze**, Ivan V. Kuzmin, Michael Y. Kosoy, Jin-Won Song and Richard Yanagihara - The Article **"Molecular Phylogeny of Hantaviruses Harbored by Insectivorous Bats in Côte d'Ivoire and Vietnam"**. *Viruses* 2014, 6, 1897-1910; doi: 10.3390/v6051897, www.mdpi.com/journal/viruses, pp.1898-1910.
7. Tinatin Kuchuloria, Paata Imnadze, Maiko Chokheli, Tengiz Tsertsvadze, Marina Endeladze, Ketevan Mshvidobadze, Danielle V. Clark, Christian T. Bautista, Moustafa Abdel Fadeel, Guillermo Pimentel, Brent House, Matthew J. Hepburn, Silke Wo"lfel, Roman Wo"lfel, and Robert G. Rivard Yanagihara - The Article **"TShort Report: Viral Hemorrhagic Fever Cases in the Country of Georgia: Acute Febrile Illness Surveillance Study Results"**. *Am. J. Trop. Med. Hyg.*, 91(2), 2014, pp. 246-248 doi:10.4269/ajtmh.13-0460, Copyright © 2014 by The American Society of Tropical Medicine and Hygiene.
8. Otar Chokoshvili, Khatuna Lomashvili, Naile Malakmadze, Marika Geleishvili, Jonas Brant, **Paata Imnadze**, **Nazibrola Chitadze**, **Lia Tevzadze**, **Gvantsa Chanturia**, **Tea Tevdoradze**, Tengiz Tsertsvadze, Rajal K Mody, Deborah Talkington, Nancy Strockbine, Russell A Gerber, Edmond Maes, Thomas Rush - The Article **"Investigation of an outbreak of bloody diarrhea complicated with hemolytic-uremic syndrome"**, *Journal of Epidemiology and Global Health* (2014) 4, 249- 259; <http://www.elsevier.com/locate/jegh>.
9. **G. Kuchukhidze**, A. M. V. Kumar, P. de Colombani, M. Khogali, U. Nanava, H. M. Blumberg, R. R. Kempker - The Article **"Risk factors associated with loss to follow-up among multidrug-resistant tuberculosis patients in Georgia"**. *Public Health Action*, International Union against Tuberculosis and Lung Disease Health solutions for the poor, vol. 4 supplement 2 published 21 October 2014 p.S42-S49.
10. N. Baratashvili, V. Khvedelidze – the article "Development of the technology of a dermatology ointment containing extracted tea leaf oil", scientific journal "New University", N01, 2014, Yoskar-Ola, Russia ISSN 2221-9552, pp.36-40.
11. N. Baratashvili, V. Khvedelidze, K. Sirbiladze – the article "Effect of preliminary processing and extraction mode on the antioxidant activity of bilberry fruit". X International Scientific Conference materials, Sofia, Bulgaria, 17-25 July 2014, pp.45-49.
12. Lela Urushadze – "Bat monitoring in Georgia", Weska Wildlife Network, www.weska.net, 1p..
13. **Maia Kereselidze**, **Ketevan Gambashidze**, **Konstantin Kazanjan**, **Marina Shakhnazarova**, et al. **"Global, regional, and national levels and causes of maternal mortality during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013"**, *The Lancet*, Volume 384, No. 9947, p 980–1004, 13 September 2014.
14. **Maia Kereselidze**, **Ketevan Gambashidze**, **Konstantin Kazanjan**, **Marina Shakhnazarova**, et al. **"Global, regional, and national age–sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013"**, *The Lancet*, published online: December 17, 2014.
15. E. Vashakidze, T. Megrelishvili, E. Pachkoria, **L. Tevzadze** –The Abstract **"HUS (Hemolytic-Uremic Syndrome) and Amebic Dysentery in Georgia"**, *Georgian Medical News*, 2014.

Abstracts

1. **L. Malania**, E. Zhorzholiani, **N. Abazashvili**, **N. Chakvetadze**, **G. Katsitadze**, **P. Imnadze** -The Abstract **"*C. botulinum* Strains Isolated in Georgia in 2001-20012"**, 2014 ASM biodefense and Emerging Diseases Research Meeting, Washington, USA, January 27-29, 2014, p.63.
2. **E. Khmaladze**, **E. Zhgenti**, **G. Chanturia**, M. J. Nikolich, D. Birdsell, **S. Tsanava**, **P. Imnadze**, P. Kiem -The Abstract **"Whole Genome Sequencing of 10 *Bacillus anthracis* Strains from Georgia"**, 2014 ASM biodefense and Emerging Diseases Research Meeting, Washington, USA, January 27-29, 2014, p.63.
3. **Burjanadze I.**, **Zakhashvili K.**, **Dolbadze S.**, Heyer, N. J., **Imnadze P.**- The Abstract **"HIV Transmission from Remunerated Blood Donor (RBD) to Recipients in Georgia, 2012"**, at the 14th International congress of International Federation of Infection Control (IFIC), Malta, 12-15 March, 2014.
4. **L. Urushadze**, A. Velasco, **K. Sidamonidze**, **G. Chanturia**, **Ts. Tushishvili**. **Paata Imnadze** – The Abstract **"The First Molecular Epidemiology Study of Human Rabies Virus in Georgia"**, at the 14th International congress of International Federation of Infection Control (IFIC), Malta, 12-15 March, 2014.
5. **E. Adeishvili** - The Abstract **"Capabilities of the NCDL Lugar Center Georgia"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
6. **G. Babuadze** - The Abstract **"Emerging Crimean-Congo Hemorrhagic Fever (CCHF) in Georgia"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.

7. **L. Bakanidze** - The Abstract **"The role of Biosafety Associations in Global Biosecurity"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
8. **I. Burjanadze** - The Abstract **"GIS Mapping of Tularemia Historical Data Collected in Georgia"**, 21 Annual CSCM – World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
9. **G. Chanturia** - The Abstract **"Tularemia Foci of East Georgia"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
10. **A. Gamkrelidze, P. Imnadze** - The Abstract **"Georgia's Capacity to Meet Global Health Security and Comply with International Health Regulation"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
11. **E. Khmaladze** - The Abstract **"Whole Genome Sequencing of Ten *Bacillus Anthracis* Strains from the Country of Georgia"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
12. **K. Sidamonidze** - The Abstract **"Molecular Typing of Human and Animal *Brucella* Isolates from Georgia"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
13. **R. Sukhiashvili** - The Abstract **"Establishment of a German-Georgian Network for Biosecurity and Diagnostic of Dangerous Infection Diseases"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
14. **N. Trapaidze** - The Abstract **"Assessment of the Human Immune Response to Anthrax Infection and Vaccination"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
15. **K. Zaridze** - The Abstract **"Establishment of a Regional Training and Resource Center in Biosafety, Biosecurity and Laboratory Management in the South Caucasus"**, 21 Annual CSCM –World Congress on CBRNe Science & Consequence Management, Tbilisi, Georgia, 1-5 June 2014.
16. **M. Ramishvili, P. Imnadze, L. Malania, A. Navdarashvili, M. Broladze, T. Rush, M. Geleishvili** - The Abstract **"Evaluation of human brucellosis surveillance system in Georgia, 2010-2012"**, Brucellosis 2014 International Research Conference, Berlin, Germany, 9-12 September 2014.
17. **Kuchukhidze George, Kasradze Ana, Dolakidze Tamar, Baliashvili Davit, Blumberg Henry, Kempker Russel** – The Abstract **"BCG Associated Lymphadenitis in the Country of Georgia"**, 45 Union World Conference on Lung Health, Barselona, Soain, 28.10-01.11.2014, Abstract # 5241.
18. **Natia Sulaberidze, Gocha Giorgidze** – The Abstract **"Measures to Improve Biosafety at Kutaisi NCDC Zonal Diagnostic Laboratory"**, ABSA 57 Annual Conference, 05-08.10.2014, San-Diego, USA. p.1.
19. **N Chitadze, N Trapaidze, EH Dyson, RG Rivard and L. Baillie** – The Abstract **"Assessment of the human immunological response to anthrax infection"**, Workshop of the biology of Anthrax. Cardiff, Wales, 11-13 Nov, 2014, 1 p.
20. **N. Ninashvili, C. Middlecamp, N. Vepkhvadze** – the abstract **"Global climate changes – a new challenge for the environment, science and education"**, 2nd International Simposium "Issues of ethics in the environmental health", Tbilisi, Georgia, 2014, 1 p.
21. **Alexey Burdakov, Paata Imnadze, Natalya Papelova, Andrey Ukharov, Khatuna Zakhashvili** – the Abstract **"Monitoring Measles Outbreak in Georgia in 2013 using Different Surveillance tools: EIDSS, PROMED and WHO CISID"**, IMED, Vienna, Austria, October 30–November 4, 2014, 1p.
22. **Nana Mamuchishvili, K. Zakhashvili, G. Chakhunashvili, D. Echeverria, P. Imnadze** – The Abstract **"Increased Detection of Crimean-Congo Hemorrhagic fever (CCHF) in Georgia (2009-2014)"**, IMED, Vena, Austria, October 30–November 4, 2014, 1p.
23. **K. Sidamonidze, M. Nikolich, K. Drees, J. Foster, D. Birdsell, E. Zhgenti, N. Trapaidze, G. Chanturia, P. Keim, P. Imnadze** – The Abstract **"Identification of Single Nucleotide Polymorphisms Specific for Brucella strains isolated in the Country of Georgia"**, Brucellosis 2014 International Research Conference, Berlin, Germany, 9-12 September 2014, 1 p.
24. **L. Malania, M. Ramishvili, G. Babuadze, K. Goginashvili; M. Donduashvili; T. Tigilauri, M. Kosoy, M. P. Nikolich5, N. Trapaidze, S. Goetz, R. J. Arner, Paata Imnadze** – The Abstract **"Brucella Seroprevalence Study among Stray and Pet Dogs in Georgia"**, Brucella 2014 International Conference, Brucellosis 2014 International Research Conference, Berlin, Germany, 9-12 September 2014, 1p.
25. **M. Dgebuadze** - The Abstract **"Serological study for A/H2N3 avian influenza infection in Georgia"**, Brucella 2014 International Conference, Brucellosis 2014 International Research Conference, Berlin, Germany, 9-12 September 2014, 1p.
26. **Zaal Merabishvili** – The Abstract **"Consumer Knowledge Attitude and Practice of antibiotic use -Tbilisi and KuThe First Molecular Epidemiology Study of Human Rabies Virus in Georgia"**, IFIC , Atlanta, USA, April 27- March 03, 2014, 1p.
27. **Sophio Dolbadze*, Eka Khabazi, Kakha Akhvlediani** – The Abstract **"Survey on Awareness and Practice of Breast Cancer and Cervical Cancer Prevention among Women following Screening Awareness Training, Gori and Zugdidi Districts, Georgia, 2013"**, IFIC , Atlanta, USA, April 27- March 03, 2014, 1p.
28. **L.Shashikashvili, N. Gugushvili** – The Abstract **"Assessing and Improving Biosafety Practices in Georgian Medical Personnel from Local Clinics Who Collect Patient Samples and Submit them to the Diagnostic Laboratory"**, ABSA-57 Annual Conference, San-Diego, USA, 05-08 October, 2014, 1p.

29. **K. Sidamonidze, D. Mills, T. Torok, E. Zhgenti, D.Tsereteli, L.Tevzadze, N. Khachidze, Z. Lewis, M. Tsui, N. Bokulich, P. Imnadze** – The Abstract **“Characterization of bifidobacteria in the Georgian infant population”**; The workshop “Use of prebiotics for the promotion of human health in the outer space and hard working conditions”, Osaka, Japan, 14-22 March 2014, 1 p.
30. **L. Malania, Marine Ramishvili, N. Abazashvili, E. Khmaladze, P. Imnadze** – The Abstract **“Antibiotic Susceptibility of B. anthracis Isolates in Georgia”**, Anthrax international Conference, Cardiff, UK, 10-14 March 2014, 1p.
31. **T. Tevdoradze, E. Zhgenti, L. Tevzadze, D. Zorikov, G. Chanturia, Matthew Scholz, Patrick Chain, Tracy Erkkila** – The Abstract **“Genetic Characterization of Extended-Spectrum β -Lactamase Genes of Escherichia coli in Georgia”**, CLC Bio Workshop; Attending the annual Next Generation Sequencing congress, Santa Fe, Los Alamos, USA, 26.05-08.06.2014, 1 p.
32. **Adam Kotorashvili, Ekaterine Tevdoradze, Jason Farlow, Natia Skhirtladze, Irina Antadze, Sophio Gunia, Nana Balarjishvili, Leila Kvachadze and Mzia Kutateladze** – The Abstract **“WHOLE GENOME SEQUENCE COMPARISON OF TEN DIAGNOSTIC BRUCELLAPHAGES PROPAGATED ON ALTERNATE BACTERIAL HOSTS”**, CLC Bio Workshop; Attending the annual Next Generation Sequencing congress, Santa Fe, Los Alamos, USA, 26.05-08.06.2014, 1 p.
33. **Adam Kotorashvili, Ekaterine Tevdoradze, Jason Farlow, Natia Skhirtladze, Irina Antadze, Sophio Gunia, Nana Balarjishvili, Leila Kvachadze and Mzia Kutateladze** – The Abstract **“Whole genome sequence comparison of ten diagnostic brucellaphages propagated on alternate bacterial hosts”**, CLC Bio Workshop; Attending the annual Next Generation Sequencing congress, Santa Fe, Los Alamos, USA, 26.05-08.06.2014, 1p.
34. **E. Vashakidze, T. Megrelishvili, E. Pachkoria, P. Imnadze, L. Tevzadze, G. Chanturia, T. Tevdoradze, N. Khachidze** – The Abstract **“Isolation of Extraintestinal pathogenic E. Coli from postcholecystectomy samples and their antimicrobial resistance profile in Georgia”** P1066, ECCMID, 1 p.

Other publications

1. Zhvania M., Lordkipanidze T., Kiladze M., Japaridze N., **Kotaria N.**, Bikashvili T.– In book: **“Kainic Acid, neurotoxic properties, biological sources and chemical applications”**; Chapter 5: **“The effect of Kainic acid on the rat brain: histological, electron- microscopical and two-photon microscopical study”**. Biochemistry Research Trends. Editor: Elisabeth Leone, Published by Nova Science Publishers, Inc. New York, 1 June, 2014 (Chapter 5, 95-138) p. 44.
2. A. Gamkrelidze, M. Kereselidze, M. Tsintsadze, K. Gambashidze, M. Shakhnazarova, N. Tsetskhladze, N. Grdzeldze, I. Kocharova, S. Shakhbudagyan, N. Gognadze, L. Khuchua, L. Tsertsvadze – Statistical reference-book “Healthcare, Georgia 2013”, (190 pp. Georgian and 162 pp. English), Tbilisi, Georgia, 2014
3. A. Gamkrelidze, M. Kereselidze, M. Tsintsadze, K. Gambashidze, M. Shakhnazarova, N. Tsetskhladze, N. Grdzeldze, I. Kocharova, S. Shakhbudagyan, N. Gognadze, L. Khuchua, L. Tsertsvadze – Statistical reference-book “Healthcare, Georgia 2014”, Brief overview (26 pp. Georgian and 21 pp. English), Tbilisi, Georgia, 2014.
4. “Assessment of the needs for enforcement of the WHO Framework Convention on Tobacco Control in Georgia” – 62 pp., June, 2014.
5. “The WHO Framework Convention on Tobacco Control in Georgia” – 34 pp., 2014.

Other educational material

- Pamphlet – “Tobacco as the most significant problem for global health” – 12 pp., Tbilisi, 2014.
- Pamphlet – “Brucellosis – Brucellosis has emerged in a village but we can stop it!” – 4 pp., Tbilisi, 2014.
- Pamphlet – “Vaccinate and protect your child from pneumococcal diseases!” – 4 pp., Tbilisi, 2014.
- Pamphlet – “Anthrax (charbon)” – 4 pp., Tbilisi, 2014.
- Pamphlet – “Crimean-Congo Hemorrhagic Fever” – 4 pp., Tbilisi, 2014.
- Leaflet – “Vaccinate, protect!” – European Immunization Week – 1 p., 2014.
- Leaflet – “Immunization” – 2 pp., 2014.
- Poster – “Brucellosis – Brucellosis has emerged in a village but we can stop it!”, Tbilisi, 2014.
- Poster – “Vaccinate and protect your child from pneumococcal diseases!”, Tbilisi, 2014.
- Poster – “Anthrax”, Tbilisi, 2014.
- Poster – “Crimean-Congo Hemorrhagic Fever”, Tbilisi, 2014.

Scientific conferences

- On 24 March 2014, the NCDC&PH and the National Center for Tuberculosis and Lung Diseases, with the support of the USAID’s TB Prevention Project, hosted a conference dedicated to the World TB Day, with the theme “Reach the 3 Million”. Georgia joined global activities in creation of new diagnostic and treatment anti-TB mechanisms.
- On 26-28 March 2014, the 5th annual Biosafety Association for Central Asia and the Caucasus (BACAC) conference was held, organized by the NCDC&PH and Georgian Biosafety Association, with the support of DTRA, Great Britain MOD and the EU.

On 16-18 June 2014, Tbilisi hosted the US–Georgian Joint Scientific Conference on the issues of HIV/AIDS, tuberculosis and viral hepatitis. The conference was organized by the National Institutes for Health (NIH), the National Institute of Allergy and Infectious Diseases (NIAID), the International Science and Technology Center (ISTC), MOLHSA, the Embassy of Georgia to the USA, the NCDC&PH and the Infectious Pathology, AIDS and Clinical Immunology Research center.

- On 2-5 June 2014, Tbilisi hosted the World Congress of Chemical, Biological, Radiation and Nuclear Sciences and Outcomes Management. The honorary director of the Congress was the Prime-Minister of Georgia Irakli Gharibashvili. At the Congress an Agreement was signed between the Georgian and US Governments on Transition of Costs and Responsibilities Related to the Provision of the Unified Laboratory System for Detection, Surveillance and Response to Extremely Dangerous Pathogens, and the Richard Lugar Center for Public Health Research.
- Within the framework of the project – "Enforcement of 100% Smoke-Free Policy in Medical and Educational Institutions", a conference – "Tobacco or Health – 2014" – was held, funded by the "Blumberg Philanthropy" and supported by the World Lung Foundation and the International Union against Tuberculosis and Lung Disease.
- A conference – "European Immunization Week" was held.
- A scientific conference – Microbial Ecology of the Environmental Pathogens.

Participation of the Center's employees in international congresses and conferences

- The 14th Congress of the International Federation of Infection Control (IFIC) (St. Julians, Malta).
- The 24th European Congress of Clinical Microbiology and Infectious Diseases (Barcelona, Spain).
- The 17th Annual EBSA Conference (Ghent, Belgium).
- Annual Next Generation Sequencing Congress (Santa Fe, Los Alamos, USA).
- American Society for Virology annual conference ASV 2014 (Fort Collins, USA).
- The 9th World Congress on Alternatives and Animal Use in the Life Sciences (Prague, Czech Republic).
- The annual Brucellosis International Research Conference (Berlin, Germany).
- ABSA 57th Annual Biological Safety Conference (San Diego, USA).
- The 45th World Congress on Lung Health (Barcelona, Spain).
- The IMED conference 2014 on CCHF and Measles Outbreak (Vienna, Austria).
- The 60th International Congress of American Association for Respiratory Care (Las Vegas, USA).
- ISDS annual conference (Philadelphia, USA) etc.

Trainings/workshops/study courses

- 5 workshop courses on epidemiology issues were conducted during the reporting period: discussions on problems concerning the epidemiology statistics and individual tasks of non-communicable diseases (cardiovascular system diseases, diabetes etc.) were held. Total of 103 specialists attended the workshop courses.
- "Use of Prebiotics for the Promotion of Human Health in the Outer Space and Hard Working Conditions" (Osaka, Japan).
- "Global Burden of Antimicrobial Resistance" (NCDC&PH).
- "Antimicrobial Resistance and Recommended Standards for Laboratory Diagnostics".
- trainings of the 13th CDC International Symposium on Biosafety (Atlanta, USA):
- Basic Elements of the Biosafety Management Program"; "Daily Management of the Selective Agents Program"; "Basics of Biosafety and Decontamination".
- "Study of Influenza Data Management of Analysis" (Athens, Greece).
- "BSL-3 Laboratory Management" (Raleigh, USA).
- "Diagnostics of Arbovirus and Surveillance Procedures" (Fort Collins, USA).
- "New Methods of IFA and Antigene Preparation (Fort Collins, USA).
- „Bat-borne Pathogen Training Course" (Singapore).
- "Training on Bioinformatics" (Santa Fe, Los Alamos, USA).
- "Molecular Methods of Human Genome Investigation" (Tartu, Estonia).
- "GIS Software Training" (Amsterdam, Enschede, the Netherlands).
- "Study of the Issues of Anthrax Spores Germination in Soil" (Wells, UK).
- "Laboratory Quality Management: SOPs, Accreditation, Documentation and Audit" (Dubai, UAE).
- Training on "Metagenomic Samples Sequencing" (Bishkek, Kirgizstan).
- Training on Malaria (Moscow, Russia).

- “GIS Software Training” (Gainesville, USA).
- “Study of Microbiological and Molecular and Biological Laboratory Technique” (Munich, Germany).
- “Systematics, Biology, Morphology, and Ecology of Malaria Vectors and Methods to Combat them” (Dushanbe, Tajikistan).
- “Laboratory Quality Management and Gradual Introduction of Quality Control in National Influenza Centers” (Tirana, Albania).
- “Issues of Bioinformatics” (Spring, USA).
- “Trans-border Cooperation between the Central Asian and Middle East Countries with Respect to Leishmaniasis Problems” (Turkmenistan).
- “Training of Biosafety and Biosecurity Trainers to Reduce Biological Risks in Kazakhstan, Asia and the Caucasus” (Almaty, Kazakhstan); 2 certified trainers were trained.
- The Center’s specialists conducted the following training within the framework of TAP 712012 project (Kars, Turkey): Control of Infections Related to Medical Service”; 10 persons attended the training course.
- “Control Plan for Technologies Subject to Export” (DTRA), attended by 17 specialists.
- “Business Development and Fund Raising Group Plan”, attended by 12 specialists.
- Interpol workshop – „Operation S3OMMET“.
- „Laboratory Quality Management System“.
- „Dilemma of Dual – Use in Life Sciences – Ways to Overcome“.
- “R&D Partner projects through STCU and Start-up companies”, trainer Vic Korsun, STCU Director from US side; the workshop was attended by the Center’s 12 specialists.
- “Defining the Disease Burden and Decision Making Regarding the Seasonal Anti-Influenza Vaccination” etc.
- EIDSS v6 Laboratory Module training.
- “Bacteriology of Leptospirosis”.
- „Using Geographic Information Systems (GIS) in disease control programs” at Royal Tropical Institute and University of Twente.
- Study of spatial and analytical parts the GIS and the ecological niche modeling module at University of Florida.

Skills development at the Center’s premises

- In 2014, total of 92 specialists completed internships at the Center, among them, 14 students of Tbilisi State Medical University had practical trainings.

Preparation of qualification studies by the specialists of other institutions at the Center’s premises

- In 2014, the following doctorate theses were elaborated at the premises of Lugar Center for obtaining doctoral degree, with the assistance of L. Tevzadze, Doctor of Medicine:
- “E.coli – the Role and Importance of the Infection during Pathologies of Diarrheal Diseases and Biliary Tracts”, TSU, Infectious Diseases Chair;
- “Epidemiologic Specifics and Prevention of Bloody Diarrhea of Various Nature and Related Hemolytic-Uremic Syndrome in Georgia”, the Center of Infectious Pathology.

VII. Maintenance of Medical Statistics

Maintenance of Medical Statistics

- Participation in the institutionalization of the medical statistics system: during the year, meetings were held with appropriate departments and offices of the Ministry of Labor, health and Social Affairs of Georgia regarding medical records, data presentation systems, classification codes etc.
- Participation in the introduction of new technologies for obtaining statistical information: a case-based “Hospital discharge record (form the #IV-066) for the inpatient reporting” was in progress throughout the country; the Center’s specialists held consultations with customers.
- Revision and update of statistical forms/information elements: Annual, monthly and quarterly statistical forms were substantially modified in compliance with the current international requirements and the country needs, and were approved by order of the Minister of Labour, Health and Social Affairs of Georgia.
- Collection of statistical information from medical institutions and data entry: annual reports for 2013 were received from treatment and preventive institutions under the Ministry of Labor, health and Social Affairs of Georgia and under all other agencies, monitoring of filling out of the statistical information, correction and entry into the database.
- Data processing through software: statistical data were processed and combined reports by sectors were prepared at national and regional levels.
- Submission of statistical information in the format and within time limits defined by the regulation: information and statistical reports from agencies at national and regional levels were submitted to the Ministry of Labor, health and Social Affairs of Georgia and the National Statistics Office of Georgia according to the defined schedule.
- Management of the routine statistical database: administration and update of the statistical databases was in progress.
- Activities related to the introduction of the population-based cancer registry: the software was upgraded, improved/supported. Introduction of the Cancer Registry was carried out in a pilot mode; 51 institutions participated in reporting process; up to 5,000 reporting forms were received. Personnel involved in the Introduction of the Cancer Registry were permanently consulted and reporting forms were corrected.
- methodic and practical assistance in statistics was rendered: providers and consumers of statistical reports were consulted on various matters.

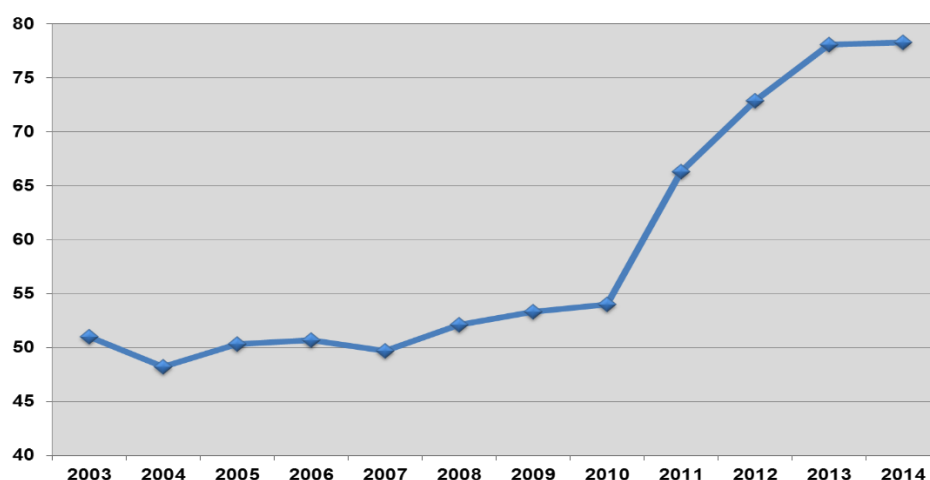
Statistical data analysis and submission

- Calculation of the healthcare indicators and reflection of morbidity trends: prevalence indicators of various diseases, morbidity and mortality rates, maternal and child morbidity and mortality rates, indicators of millennium development goals were calculated; they were compared to other countries’ indicators; dynamics tendencies were identified.
- Preparation of annual tabular reference-books: annual tabular reference-books for the national, regional and district levels were prepared.
- Preparation of the annual statistical reference-book “Healthcare”: the annual Statistical Reference-book “Healthcare in Georgia, 2013” was published in Georgian and English languages.
- A short review “Healthcare” was prepared in Georgian and English languages.
- Modification of the content of the birth/death registration software was implemented within the competence.
- Meeting of the requirement for statistical data: departments of the Ministry of Labor, health and Social Affairs of Georgia, international and non-governmental organizations, and other consumers were provided with the required statistical data all year long (~110 orders).
- Mechanisms for expanding analytical activities of the department were determined (in terms of the possibility and need for the inclusion of the State Universal Healthcare Program data into the analysis).

Some statistical data collected from medical institutions in 2014:

- In 2014, there were 95,511 pregnancies registered in the country (8% higher than in 2013).
- Antenatal care initiated during the first trimester – 48,521 cases (78.1% in 2013; 78.3% in 2014).

**Proportion of Pregnant Women whose Antenatal Care
Initiated during the First Trimester, (%), Georgia**

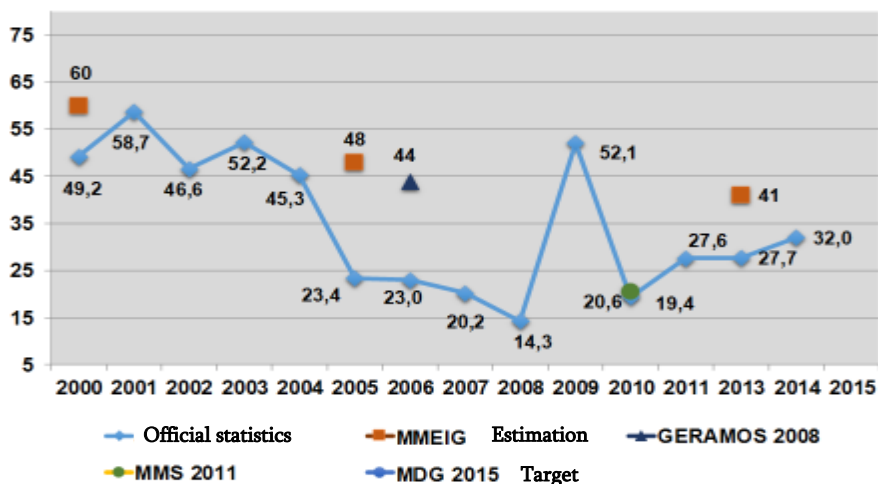


- Out of 56,171 pregnant women 87% had four full antenatal care visits (vs. 84.6% in 2013).
- Screening data: 88% of pregnant women were tested for the Rh-factor, syphilis, HIV and viral hepatitis B (in 2013 - 88.9% were tested for Rh-factor, 85.5% - for syphilis, 85.9% - for HIV infection and 84.2% - viral hepatitis B).
- The number of deliveries – 59,924 (4% more than in 2013), including 57% - normal deliveries.
- The number of live births – 60,061 (4% more than in 2013), including 6% of underweighted babies, 8% weighed more than 4000 grams.
- The number of stillbirths – 637 babies; stillbirth rate per 1,000 births - 10.5 (in 2013 - 9.4).
- Maternal mortality rate per 100,000 live births - 32 (19 cases of early maternal deaths). In addition, 5 cases of late maternal death were recorded.

Natality, Child and Maternal Mortality (according to Medical Institutions reports)

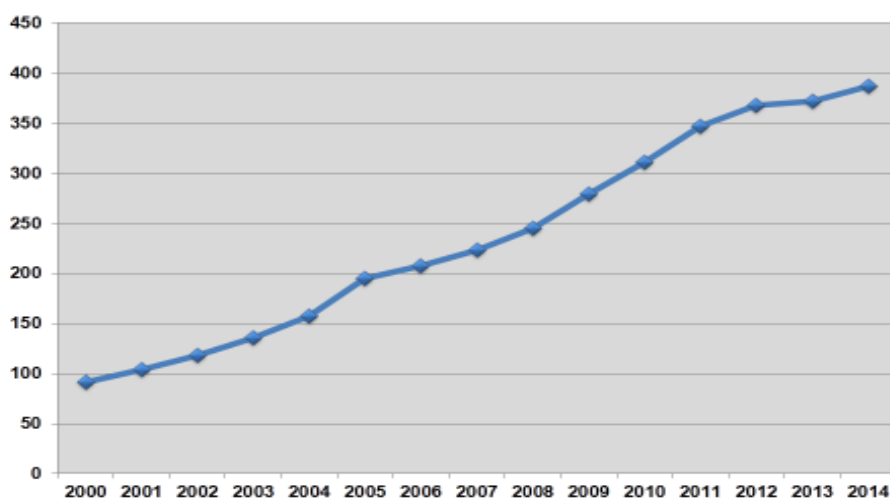
	2008	2009	2010	2011	2012	2013	2014
Number of deliveries	56,096	61,656	61,928	57,413	56,848	57,573	59,924
Number of live births	56,025	61,677	61,901	57,503	56,890	57,688	60,061
Number of stillbirths	717	665	682	554	647	549	637
Stillbirths ratio per 1,000 births	12.6	10.7	10.9	9.5	11.2	9.4	10.5
Number of maternal deaths	8	33	12	16	13	16	19
Maternal mortality ratio per 100,000 live births	14.3	52.1	19.4	27.6	22.8	27.7	32.0

Maternal Mortality Ratio per 100,000 Live Births, Georgia



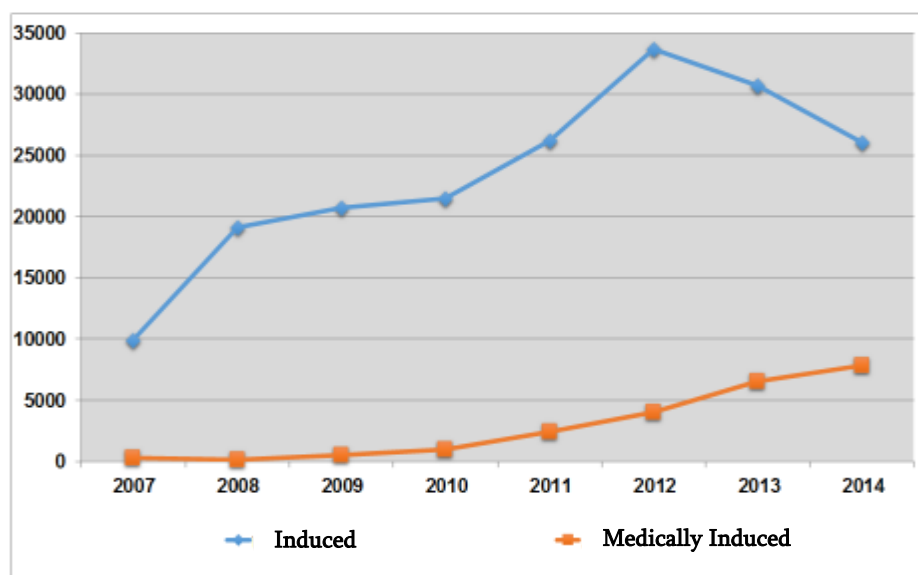
- Number of caesarean sections – 23,246; caesarean section ratio per 1,000 live births – 387 (4% more than in 2013).

Number of Caesarean Sections per 1,000 Live Births



- Abortions: 26,377 induced abortions (14% less than in 2013), including: with vacuum aspiration – 48%, medically induced – 30%. Abortion ratio per 1,000 live births – 439.

Number of Abortions, Georgia



- Number of medical institutions involved in the reporting process – 2,478, including 252 inpatient facilities, 603 outpatient-polyclinics, 380 dentist's offices/clinics.
- According to the case-based database, inpatient medical service was rendered to 402,341 patients (vs. 383,741 patients in 2013).
- In 2014, the case-based reporting system allowed for registration of re-hospitalization cases: 36 such cases were registered.

Name of diagnosis	ICD-10 code	No of re-hospitalizations		
		in 7 days	in 15 days	in 30 days
Chronic tonsillitis	J35.0	2	2	2
Mental and behavioral disorders due to use of alcohol. Restrained condition (psychoactive substance withdrawal syndrome)	F10.3	9	11	14
Atrial fibrillation and flutter	I48	4	7	8
Paroxysmal tachycardia, unspecified	I47.9	1	1	1
Acute upper respiratory infection, unspecified	J06.9	1	1	1
Gastroenteritis and colitis, unspecified	A09.9	1	1	1
Acute bronchitis, unspecified	J20.9	1	1	1
Polyp of vocal cord and larynx	J38.1	1	1	1
Anoxic brain damage, not elsewhere classified	G93.1	1	1	1
Delayed or excessive hemorrhage following incomplete spontaneous abortion	O03.1	3	3	3
Dislocation of shoulder joint	S43.0	1	1	1
Malignant neoplasm of prostate	C61	1	2	2

Some infectious diseases, 2014:

- Malaria – only 6 imported cases are registered;
- AIDS – detected 566 cases of the HIV infection identified for the first time in life (vs. 490 cases in 2013). Total of 4,726 HIV/AIDS cases were registered during the year (2% more than in 2013).
- Tuberculosis – 3,839 cases of all forms of Tuberculosis were registered during the year (vs. 4,318 cases in 2013), including 2,842 new cases (vs. 3,357 cases in 2013). Proportion of new cases in totally registered cases is 26% (vs. 22% in 2013). Total number of registered pulmonary tuberculosis cases is 3,073 cases (80% of all forms of tuberculosis cases vs. 81% in 2013); number of new cases is 2,169 (18% less than in 2013).

Maintenance of medical statistical classification codes

- International Statistical Classification of Diseases and Related Health Problems ICD-10 versions were revised; amendments were made and updated at the Center's and Ministry's web-pages.
- Rendering methodic and practical assistance with respect to the classification codes: consultations were provided as necessary during the year with regard to the practical use of medical classification codes.

Relations with local and international organizations

- Collaboration with the UN Inter-agency Group for Maternal and Child Mortality Estimation to verify/adjust Georgia indicators – the IGME visited Georgia to verify maternal and child mortality estimation indicators for Georgia, which resulted in the adjustment of Georgia indicators for the mortality of mothers and children of 0-5 age.
- A Memorandum of Understanding is made and entered into by and between the National Center for Disease Control and Public Health of Georgia and the Institute for Health Metrics and Evaluation of Washington University (IHME), which intends to improve the estimates of the burden of diseases, injuries, and risk factors for Georgia, using methods consistent with the overall Global Burden of Disease Study (GBD) centered at the IHME.
- Completion of the WHO's "Health for All" and "Health Resources" databases with data for Georgia.
- A conference was held, which reviewed a report of the survey conducted within the framework of the WHO project – "Assessment of the Level of Completion of Death Certificates in the Selected Districts of Georgia" and recommendations for the improvement of the current situation.
- In collaboration with MLHSA, the National Statistics Office of Georgia and the Public Service Development Agency of Georgia, reasons for the mortality structure failure were studied, coding degree of causes of death was inspected, coding of maternal mortality was revised and adjusted; participation in working meetings

VIII. Management of the State Programs

In 2014, the NCDC&PH implemented the following state programs/components and managed and administered funds allocated for them:

- “Early Disease Detection and Screening”;
- “Immunization”;
- “Prevention of Occupational Diseases”;
- “Epidemiological Surveillance”;
- “Tuberculosis Management – Components of the Epidemiological Surveillance and Monitoring of the Tuberculosis Program Management and Laboratory Control”;
- “Safe Blood”;
- “HIV/AIDS – Voluntary Consultation on HIV/AIDS and the Testing (incl. the purchase of test-systems and consumables necessary for HIV/AIDS screening tests) Component”;

Maternal and Child Health

Components of provision of tests and consumables in order to determine hepatitis B, HIV/AIDS and syphilis in pregnant women and newborn hearing screening.

Early Disease Detection and Screening

Within the framework of the program – “For ensuring early disease detection and prevention of its spread, and for the adoption of healthy lifestyle in population”, the following events were conducted:

- Within the “Cancer Screening” component, different types of screening examinations were performed to 57,992 beneficiaries, including: 21,865 women screened for breast cancer, 23,532 – for cervical cancer, 6,417 – for colorectal cancer and 6,178 men were screened for prostate cancer (according to final results, screening performance by different cancer localizations, amounts to: 91.1% - for breast cancer screening, 78.4% - for cervical cancer screening, 100.4% - for prostate cancer screening, and 107.2% - for colorectal cancer screening);
- Within the component of “Prevention of Childhood Mental Retardation of Mild and Moderate Categories”, there were consulted 628 children aged 1-6 years, including: 607 – neurologist consultation and sleep disorder survey, 590 – neuropsychological surveys, 58 - epileptological and electrophysiological surveys (according to final results, 95.2% of the projected number was achieved);
- Within the framework of the component of “Child Developmental Disorder Screening in Children Under the Age of 6”, consultations were conducted to 2,903 children aged from 0 - up to 6 years; the following services were provided to beneficiaries: vision and hearing screening, evaluation of physical development, neurologist and psychologist consultation, school readiness assessment, premature infant development primary and secondary screening (98.3% of the predicted screening number was performed according to final results);
- Within the “Early Diagnosis and Prevention of Epilepsy” component, total number of patients screened was 1448 during the reported time frame, among them, 1,344 patients underwent primary screening for epilepsy, electroencephalography was performed for 1,081 patients, neuropsychological testing was conducted to 1,077 beneficiaries and epileptological conclusive diagnostics were done for 1,095 patients (according to final results, 96.5% of the predicted number of examinations was fulfilled);
- In the framework of “Population-based Cancer Registry Implementation” component, 305 doctors (oncologist, surgeon-oncologists, chemotherapist, and radiologist) from 44 medical facilities were trained; technical assistance for CanReg5 was provided that enabled software networking, feedback with users and testing of software analytical modules. The implementation of Cancer Registry was implemented as a pilot program.

Immunization

To protect population from preventable infections, the following actions have been conducted within the limits of the program:

- Total number of vaccinations performed was as follows: 58,382 antituberculosis vaccinations (in maternity hospitals – children in age up to 1), 56,831 vaccinations against Hepatitis B (in maternity hospitals – children under the age of 1), 261,233 vaccinations against Poliomyelitis (from 2 months up to 15 years of age), 154,164 vaccinations against Diphtheria, Tetanus, Whooping-cough, Hepatitis B and Influenza B virus (children between 2 months and 1 years of age), 53,040 vaccinations against Diphtheria and Tetanus (1-6 years of age), 45,407 vaccinations against Tetanus-Diphtheria (7-14 years of age), 167,302 vaccinations against Measles, Rubella, Mumps (ages at 1-14 and older), 81,003 vaccinations against Rotaviruses (at 12-14

- weeks), 48,779 DPT vaccinations and 2,696 pneumococcal vaccinations;
- In the frame of “Provision of Specific Serum and Antirabic Treatment Means” component, the following procurements were made: 195,000 doses of antirabies vaccine, 23,400 doses of equine antirabies immunoglobulin; Moreover, specific serums and vaccines were purchased in the following amounts: 220 vials of 2,200 doses of the vaccines against Yellow Fever,
- 60 vials of monovalent serum against viper (*Vipera Lebetina*) venom, 124 vials of monovalent serum against viper venom, 48 complete sets of polyvalent serum against European Viper. As a result, provision of necessary stockpiles of immunization materials and equipment has been ensured;

The vaccination coverage for Georgia during the reporting period was as follows:

- BCG (anti-TB vaccine) – 97.1%;
- Hepatitis B – 94.5%;
- Tdap+HepB+Hib3 (for children under 12 months of age) – 92.4 %;
- Tdap (for 18 months old children) – 78.8 %;
- OPV3 (for children under 12 months of age) – 90.7 %;
- OPV4 (for 18 months old children) – 86.4 %;
- OPV5 (for 5 years old children) – 79.7 %;
- MMR1 (for 12-24 months old children) – 93.4 %;
- MMR2 (for 5 years old children) – 79.2 %;
- DT – 80.8 %;
- Td – 65.2 %;
- RV1 – 79.7 %;
- RV2 – 71.3 %.

State program on Epidemiological Surveillance

To improve epidemiological safety as well as epidemiological surveillance of infectious diseases and laboratory services across the country, the following actions were conducted:

- There were 6 brought cases of Malaria (Tropical Malaria) revealed in Georgia. The NCDC laboratory provides checking and regular quality control of 10% of the studied results (blood thick drops and smears) delivered from the regions/districts across the country. Totally, 266 patterns were committed; the results for all of them were negative. There were examined 28 blood samples of Malaria suspected patients (blood thick drops and smears) and 5 confirmed cases of Tropical Malaria were reported.
- There were performed 1,431 screening research for protozoan diseases and helminthosis.
- In order to study the spread of hepatitis, a laboratory research for hepatitis markers (HBsAg, AntiHBc and AntiHCV) was conducted in 278 (93% of planned) patients with viral hepatitis and diseases not associated with their risk factors. There were 10 persons (3.5%) with Hepatitis B positive (HbsAg – 1, Anti HBc - 9) results, 20 (7.1%) Hepatitis C positive (Anti HCV) cases and two patients were positive for both markers.
- In the frames of “Diarrhea Diseases Epidemiological Surveillance” component, the total number of laboratory testing of faeces samples performed for acute diarrhea was 241.
- Within the “Sexually Transmitted Diseases Epidemiological Surveillance” component, there were conducted laboratory testing of 61 patients, in particular, 59 patients were tested for syphilis (RPR screening) and 2 for gonorrhea infection.
- In order to study the antimicrobial resistance of received bacterial cultures, there were conducted microbiological analyses of 176 samples received from intensive care departments of 7 medical facilities.

Safe Blood

There were 56,456 donations done in blood banks involved in the program, including 16,571 voluntary donors. During the reporting period, there were revealed 66 probable positive cases of HIV/AIDS, 903 probable cases of Hepatitis C, 625 probable positive tests for Hepatitis B and 392 probable cases for Syphilis.

Prevention of Occupational Diseases

Within the program, epidemiological investigations were carried out in several industries (International Energy Corporation of Georgia LTD “Tbilsres”, Kaspi cement plant “HeidelbergCement”, Zestafoni Ferroalloy Plant, JSC “Elmavalmshebeli”) in order to protect the health of employed population and prevent the occurrence of occupational diseases; projects of technical regulations were prepared.

TB Management State Program

- Within the “TB Program Epidemiological Surveillance and Management” component, the epidemiological

investigation of family and professional contacts of the TB patients were performed; investigation of selected contacts on latent/active tuberculosis were conducted on the base of questionnaires in the way of active surveillance method; the referral of positive cases to the service providers for diagnosis confirmation and further treatment was implemented according to the principles of geographic accessibility.

- During the reporting time frame, there were investigated 3,050 contacts of the 1085 acid-fast bacteria positive patients. Average index equals to 2.81 contacts on one patient.
- Transportation of 2,450 parcels and 14,141 investigation samples was performed using the Georgian Post services.
- The following activities were performed within the laboratory control component: 58,155 bacterioscopic investigations, 37 198 diagnostics, 20,957 chemo controls, 15,366 investigation of bacteriological culture, 4,797 antimicrobial susceptibility of I type and 1,173 antimicrobial susceptibility of II type.

HIV/AIDS State Program

- During the reporting period, 20,264 HIV-screening testing was conducted throughout the country (total number of persons screened was 19,494), and 692 probable and 531 confirmed cases were identified among them. There were carried out 13,389 pre-test and 13,360 post-test consulting; 67 confirmatory testing was performed by the polymerase chain reaction (PCR) method.
- The following activities were implemented within the component of "HIV/AIDS Counseling, Voluntary Screening and Testing of Probable Cases by the Confirmatory Method of Patients with Hepatitis B and C":
 - Voluntary pre-test counseling on HIV/AIDS – 3,685;
 - Voluntary testing by the screening methods – 4,002;
 - Voluntary post-test counseling on HIV/AIDS – 3,748;
 - Confirmatory testing of probable cases by using the immunoblotting methods – 76.
- The following activities were carried out within the component of "HIV/AIDS Counseling and Voluntary Screening of Patients with Suspicious Clinical Signs of HIV/AIDS and Persons in Contact with HIV-infected Patients; and Confirmation Testing of Screening Test Positive Cases":
 - Voluntary pre-test counseling on HIV/AIDS – 9,704;
 - Voluntary testing by the screening methods – 10,404;
 - Voluntary post-test counseling on HIV/AIDS – 9,612;
 - Confirmatory testing of probable cases by using the immunoblotting methods – 337;
 - Testing of positive cases by the polymerase chain reaction (PCR) method – 67.

Maternal and Child Health State Program

- During the reporting period, HBsAg serological testing of pregnant women's blood serum was performed regularly by maternity hospitals, women's consultation centers, primary health centers and other subjects of medical activities by using fast-simple test-system and ELISA method. The number of pregnant women that are tested by Fast-simple test-systems is 48,826. 947 pregnant women's serums were confirmed on hepatitis B and 60 pregnant women's blood samples on syphilis. 984 beneficiaries received Hepatitis B immunoglobulin injection.
- The following examinations of newborn hearing screening were carried out:
- Newborn initial examination - hearing initial screening in all maternity homes of Tbilisi;
- Tympanometry examination in order to determine the middle ear intactness
- Secondary hearing screening in revealed patients;
- Computer audiometric examination by the method of brain stem auditory registration;
- Timely notification of parents of newborns with hearing disorders (including writing communication) about the condition of the child hearing;
- Creation of database about violations revealed;
- 21,812 newborns were investigated in maternity homes of Tbilisi; the study identified 37 eustachitis cases, 2 cases of atresia and 3 cases of deafness (IV quality).

IX. Activities Performed with the Financial Support of the Global Fund

“Universal Access to Quality Diagnosis and Treatment of all Forms of TB” program

Since 1 April 2014, the National Center for Disease Control and Public Health (NCDC&PH), within the framework of the Global Fund to Fight Malaria and TB grant (GEO-T-NCDC), has been implementing the “Universal Access to Quality Diagnosis and Treatment of all Forms of TB” program (the Global Fund TB Program). The Program will end on 31 June 2016 and its budget is EUR11, 182, 992.

The following results were achieved in 2014 within the framework of the Program:

- The rate of TB patients that were tested for HIV has increase to 63%, vs. the registered 60% in 2012;
- The proportion of laboratories conducting smear microscopy tests by observing quality requirements (based on external quality control) was 82% (this indicator is the same as in 2013; the target proportion for the end of the project in 2016 is 100%);
- The number bacteriologically confirmed and successfully treated TB cases was 1,737;
- The number of clinically and bacteriologically confirmed TB cases was 3,164 (new and relapse);
- 3,572 patients were included in a standard, 1st line treatment;
- The rate of pretreated patients that have undergone susceptibility testing was 88%, which is almost the same indicator as in previous years; the target rate for the end of the project in 2016 is 100%;
- The rate of terminated resistant TB within the first 6 months of treatment has decreased down to 9%, vs. 12% in 2013;
- The number of resistant/extensively resistant TB cases that were laboratory confirmed and included in the 2nd line of treatment was 509;
- 75% of resistant TB patients and 70% susceptible TB patients have become beneficiaries of a financial incentive scheme;

The following activities were implemented within the project in 2014:

- Under Order No 01/282-O of 11 November 2014 of the Minister of Labor, Health and Social Affairs of Georgia, the TB central coordination body – the National TB Council was established and its Statute was approved.
- Purchase of the first-line drugs, granting financial incentives to 150 resistant TB patients and payment of the income tax for the scheme are provided for under the State Budget for 2015;
- The rate of successfully treated sensitive TB patients has reached the WHO’s target ratio of 85%;
- In accordance with new regimens for treating resistant TB defined on the basis of the WHO’s latest recommendations, first- and second-line drugs were ordered under the GDF’s “direct transfer” scheme. These drugs will be brought into Georgia in April 2015;
- 9 (nine) GeneXpert equipment were purchased. The equipment will be brought into Georgia in April 2015. At the same time, elaboration of a plan for distribution of the equipment is in progress considering the installation, training and supervision details;
- According to the WHO’s requirements, a precondition for the import and use of the fifth group of drugs in the country is the creation of the “Bedaquiline implementation plan”. It is worth noting that a draft of the document has already been prepared and the appropriate work is in progress in terms of finalization and approval of the document;
- According to the “new funding model”, an application should be submitted to the Global Fund in July 2015; accordingly, the work on the Post-2015 TB Strategy and the Action Plan has been started;
- On 4-16 November, the WHO’s Mission visited Georgia, which performed the National TB Program assessment; the Mission’s final report will be ready next year and its main findings and recommendations will be included in the Post-2015 TB Strategy and in an application for funding submitted by the country to the Global Fund;
- Granting of monetary incentives to TB patients has been in progress since 1 June. As of today, in total, 1,957 patients have received the allowance, including 498 resistant TB and 1,459 sensitive TB patients.

“Support of the National Response to Prevent HIV/AIDS, Improvement of Life Indicators of Persons with HIV/AIDS through the Enhancement of Measures of Treatment and Care in Georgia” Program

Since 1 April 2014, the National Center for Disease Control and Public Health, within the framework of the Global Fund to Fight AIDS, Malaria and TB grant (GEO-H-NCDC) has been implementing the “Support of the National Response to Prevent HIV/AIDS, Improvement of Life Indicators of Persons with HIV/AIDS through the Enhancement of Measures of Treatment and Care in Georgia” Program. The Program budget for 2014-2015 is EUR17.5 million.

The following results were achieved in 2014 within the framework of the Program:

- 19,825 representatives of the high-risk population (injection drug users (IDUs), commercial female sex workers, MSMs) were provided with voluntary consultations and testing. This number exceeds the planned number by 39% (14,300 persons);
- 1,915 prisoners were provided with voluntary HIV consultations and testing;
- the achieved rate of the coverage indicator of intravenous drug users with the minimum prevention package exceeds the target number by 40% (25,130 persons instead of 17,925);
- The coverage rate of commercial female sex workers with the minimum prevention package is 64% (789 females were covered); and the coverage rate of MSMs is 60% (850 MSMs used the minimum service package);
- Within the Highly Active Antiretroviral Therapy program 2,479 patients were treated, including 309 patients in the territory of Abkhazia;
- In 2014, 498 patients were included in the Global Fund-financed Methadone Replacement Program (the indicator was achieved by 110%);
- 90 HIV-infected persons with viral Hepatitis C co-infection (60% of the planned number) were treated with Pegylated interferon.
- Achievements with regard to creating the political and budget environment necessary for the program administration by the end of 2014 are as follows:
- the sum for purchasing the first-line ARV drugs has been included in the State Budget for 2015; however, procurement mechanisms have to be regulated and to be coordinated with the Global Fund to obtain the same low prices for purchasing drugs as they were by using the Global Fund's Pooled Procurement Mechanism (PPM);
- Based on the latest recommendations of the WHO's ARV treatment simplification mission of June 2014, the ARV treatment regimens used in Georgia were simplified, thereby substantially reducing the amounts necessary to purchase ARV drugs; the renewed treatment regimens will be introduced gradually to maintain the high quality of ARV treatment provided to patients;
- In cooperation with the State TB Program the TB screening program was commenced among the HIV high-risk population groups using a specially designed questionnaire;
- For expanding the coverage of certain HIV high-risk populations (IDUs, MSMs) with HIV prevention packages, modern programs have been introduced, such as Popular Opinion Leader and Peer Driven Intervention programs;
- According to the "new funding model", an application should be submitted to the Global Fund in July 2015; accordingly, funding was attracted from the France's 5% Initiative and the UNAIDS Thematic Group for revising the National HIV Strategy for 2015-2017, and directly for preparing the Global Fund application;
- Data entry has been commenced for the OPTIMA electronic simulation software for the estimation of unit values of services provided for under the World Bank AIDS program. This software allows for estimation and optimal distribution of the finances among individual components of the National AIDS Program.

X. Management of Regional Public Health Services

During the reporting period:

- Monthly meetings of heads of the regional offices and divisions were held and important issues were discussed.
- Using survey materials of the pre-developed multifunctional questionnaire and through field visits, repeated/verified inventory of the capacity of local/municipal public health centers currently operating in Georgia was conducted, computerized database was established, and obtained results were analyzed.
- A draft concept for further development of public health centers was elaborated; the list of municipal programs based on local population needs and the list of potential programs were compiled and distributed; methodic recommendations for further operation of municipal PHCs were prepared; work with the representations of local PHCs and NCDC&PH laboratory service providers (2 offices in Ajara Autonomous Republic and Imereti Region – in Kutaisi; also, divisions in Samegrelo and Zemo Svaneti, in Poti, in Racha-Lechkhumi region, Shida kartli and Kvemo Kartli, Samtskhe Javakheti and Kakheti regions) is in progress; work regarding the regulation of mutual cooperation with local self-government administrations, municipal public health centers, other infrastructural units of healthcare system, primary healthcare, hospital sector, diagnostic service provider units is in progress; drafts of quantities and potential cost estimates of municipal public health center buildings, equipment, and means of communication were elaborated.
- To enforce the Decree No 1724 of 19 September 2014 of the Government of Georgia on Measures to be Taken for Controlling the Viral Meningitis Outbreak Caused by the ECHO30 Enterovirus, a survey to study the current sanitary situation at schools and kindergartens in Georgian regions was conducted using a pre-developed questionnaire. With the help of local/municipal public health centers, 2,677 schools and kindergartens in total were inspected, which amounts to over 70% of the country's educational institutions. The findings were processed and submitted to all interested agencies for implementing appropriate measures. The surveys in regions and towns were coordinated by regional offices and divisions of the NCDC&PH.

Imereti region

- Monitoring of execution of the state programs at municipal PHCs was conducted by way of periodic scheduled inspection (36 monitoring and 132 inspections).
- Within the framework of the TB State Program, logistical and statistical reports were received on monthly basis from regional divisions and Ajara Office and were analyzed. 4 quarterly logistical reports were prepared; the needs for supplementary consumables to be purchased for TB laboratories for 2015 were elaborated in compliance with the biosafety supplementary standards.
- An SOP for the “Ziehl-Neelsen Stain and Resistance Test” was prepared and approved. The standard for spending supplementary consumables was elaborated.
- Events performed in connection with the World Health Day:
- Informational and educational meetings with non-governmental sector representatives, young parliamentary representatives and schools teachers; educational workshops at schools; cognitive evening at the Nazarishvili's memorial house with the participation of students and medical society; informational material was disseminated among population; articles were published in local media; in April, a meeting with the Youth Union was arranged in connection with the European Immunization Week; a meeting with pregnant women with Kutaisi City Hall representatives was arranged; informational meetings with the European Medical Students' Association (EMSA) were arranged at Akaki Tsereteli University and informational materials were disseminated.
- During 2014, 72 contracts were signed with partner medical institutions for commercial investigation services.
- Epidemiologic investigation was conducted in 192 EDP foci; in 30 Anthrax cases, 149 brucellosis cases, 3 Botulism cases and 10 cases of unknown etiology fever.
- HIV/AIDS routine surveillance over 119 notifications.
- 39 samples were sent to the NCDC&PH for Leptospirosis test and 4 samples for Poxvirus test.
- 278 hospitalization cases with flu-like symptoms and 12 death cases were investigated.
- Epidemiologic investigation for Parapoxvirus was conducted in Khoni district.
- Because of a Shigellosis outbreak, a case-control investigation was conducted in village Tolebi of Samtredia district (169 sick and 169 healthy persons were surveyed); a causative agent – *Shigella* spp. – and a cause of the outbreak – drinking water – were identified. The outbreak was eliminated with the measures taken.
- Because of the significantly increased number of Brucellosis cases in animals in Khoni district, educational activities were conducted in village Kontuati.

- Epidemiologic investigation of cases of death of several elderly people registered in a care home in Samtredia district was conducted.
- According to the Ebola Preparedness and Action Plan, the targeted trainings were conducted for all regional hospitals, outpatient clinic physicians, emergency medical teams, ambulance crews and disinfection services personnel.
- A simulation exercise on a probable CCHF case was performed.
- In 2014, the Imereti ZDL, in total, performed over 40,000 tests on various samples, within the framework of the programs, as well as supplementary contracts.

Laboratory work performed by the Omereti ZDL during the reporting period

Program/contract/other	Name of the test	Number of samples
State TB Management program	Sputum bacterioscopy test	11,268
	TB bacteriological test	3,657
	PCR resistance with Hain test	1,213
	Sputum GXP test	1,548
Mother and child Health Care program	HB confirmation	306
	TPHA	21
Nosocomial infection surveillance component of the State "Surveillance" program	Serology (TPHA, HIV, HCV, HBsAg)	103
DTRA	Anthrax	120
	Brucellosis	352
	Diphtheria	208
	Meningococcal infection	736
Testing of group cases		264
Within the project "Sustaining the Influenza Surveillance Networks and Response to Seasonal and Pandemic Influenza by the National Health Authorities outside the United States"	Collection of diagnostic material/referral	278
Transit samples	Collection of material/reception/referral	1,442
Commercial activity		
Clinical serology tests	Serology, hormonal and biochemical tests	1,169
Clinical microbiology tests	Bacteriology	18,147
Sanitary microbiology	Bacteriology	1,944
Total		42,776

Ajara region

- Within the framework of the nosocomial infection surveillance component of the State "surveillance" program, 66 test samples were received during the reporting period.
- Within the framework of the Mother and child Health Care program, 205 samples were received, including 183 HBsAg-positive samples and 22 RPR-positive samples.
- Within the framework of the State TB Management program, 7,692 bacterioscopy tests for TB diagnostics were performed; 4,823 patients were examined, including 3,612 patients for diagnostics, incl. the number of acid resistant bacteria (+) results was 320 (8.85%). 1,419 patients were GXP tested, and TB(+) was confirmed in 158 cases, among them, bacterioscopy negative was 57 test samples. RIF(R) was identified in 158 cases, including 31 cases (19.6%) – with resistant results.
- In terms of commercial laboratory service, services worth of GEL 231,050 were provided, including the provision of contractor facilities with services worth of GEL166, 239.
- For the purpose of rendering preventive and diagnostic tests, agreements are signed with 24 medical and other institutions operating within the region, including the cooperation with 5 contractors has begun since the reporting year. Clinical bacteriology completed work worth of GEL185, 374; sanitary-microbiology tests were worth of GEL42, 605, including of non-biology material testing in hotel sector – worth of GEL9, 455; bacterioscopy of helminthes – worth of GEL2, 130. In total, 8,877 samples were received by the laboratory for diagnostics.
- Jointly with the local public health service, during the food-borne outbreak investigation – in terms of laboratory services, 17 samples were collected, and among them causative agents of Salmonella group; also, joint epidemiologic and laboratory investigations were performed on 1 Anthrax suspect case and 2

Brucellosis case contacts.

- Sinanthropus rodents were visually counted on the neighboring areas of Batumi and a trade port; the findings were analyzed and further activities were planned.
- 11 trainings (96 attendants) were conducted for medical personnel on the management of diagnostic material.
- 2 TV stories, information for the newspaper were prepared for the World TB Day; events were arranged for the Immunization Week and in memory of people who died of AIDS; a conference was held for public school children in Ajara focused on the promotion of healthy lifestyle.
- In connection with the Ebola epidemic, field visits were conducted in all hospitals operating in Ajara, and in emergency medical service centers and disaster control centers; staff of the disinfection services operating in Ajara were trained. Long telecasting and broadcasting were arranged regarding Ebola.
- Jointly with secondary school children (Public School No1) and medical personnel (Batumi Referral Hospital), meetings dedicated to the World AIDS Day were organized. An abstract for the BACAC conference and a poster to be presented at the ABSA 57th Conference were prepared.
- During the year, Ajara ZDL has performed, in total, over 20,000 laboratory tests under programs and commercial tests.

Laboratory work performed by the Ajara ZDL during the reporting period

Program/contract/other	Name of the test	No of samples
State TB Management program	Sputum bacterioscopy test	7,692
	Sputum GXP test	1,419
Mother and child Health Care program	HB confirmation	183
	TPHA	22
Nosocomial infection epidemiological surveillance component of the State “epidemiological surveillance” program	Bacteriology	59
DTRA	Anthrax	3
	Brucellosis	12
	CCHF	1
Outbreak	Bacteriology tests of a food-borne infection outbreak	17
Within the project “Sustaining the Influenza Surveillance Networks and Response to Seasonal and Pandemic Influenza by the National Health Authorities outside the United States”	Collection of diagnostic material/referral	137
Measles surveillance	Collection of material/reception/referral	39
HIV/AIDS surveillance component	Collection of material/reception/referral	53
Enterovirus infection	Collection of material/reception/referral	29
Commercial activity		
Clinical microbiology tests	Bacteriology	6,438
	Serology	99
Sanitary microbiology	Bacteriology	2,229
Bioplate test for Influenza virus target h5 and h7	Molecular diagnostic test	3,105
Total		21,537

Work performed by the LSSs

- During 2014, reception of information on infectious diseases on weekly basis: influenza surveillance during the active influenza spread period from the beginning of 2014 through week 20, and from week 40 till the end of year; viral meningitis surveillance within the period of week 18 through week 40 of 2014; according to Decree of the Government of Georgia on Measures to be Taken for the Prevention of Mass Spread of Measles, reporting on vaccination conducted against measles, within the framework of which, data collected from municipal public health centers as result of routine surveillance were received, aggregated and electronically reported to the National Center for Disease Control.

- As from 2014, within the State TB Surveillance Program, all laboratories (except for Racha-Lechkhumi laboratory) have started working under commercial agreements.

Laboratory work performed by the LSSs during the reporting period

Program/contract/other	Name of the test	Poti	Guria	Kakhaeti	Racha-Lechkhumi	Shida Kartli	Samtskhe-Javakheti	Samegrelo-Zemo Svaneti
State TB Management program	Sputum bacterioscopy test	1,939	1,844	2,332		3,474	3,078	3,720
	Sputum GXP test							
Mother and child Health Care program	HB confirmation			82		78		
	TPHA			1				
Nosocomial infection epidemiological surveillance component of the State “epidemiological surveillance” program	Bacteriology			10				11
DTRA	Anthrax			4		2	3	
	Brucellosis			1		9	242	
	CCHF					11		
	Hemorrhagic fever			13		23		
Outbreak	Bacteriology tests of a food-borne infection outbreak							11
Within the project “Sustaining the Influenza Surveillance Networks and Response to Seasonal and Pandemic Influenza by the National Health Authorities outside the United”	Collection of diagnostic material/referral							12
Measles surveillance	Collection of material/reception/referral	12		19		43	63	
HIV/AIDS surveillance component	Collection of material/reception/referral	2		4				27
Enterovirus infection	Collection of material/reception/referral			27	40	7		
Test sample preparation/referral			108					
Commercial activity								
Clinical microbiology tests	Bacteriology	12						228
	Serology			154		17	16	
Sanitary microbiology	Bacteriology	128		322				113
Total		2,093	1,952	2,969	40	3,664	3,402	4,122

XI. Financial Indicators

Factual spending of the Center's budget for 2014 amounted to 28,691.4 thousand laris.

Including:

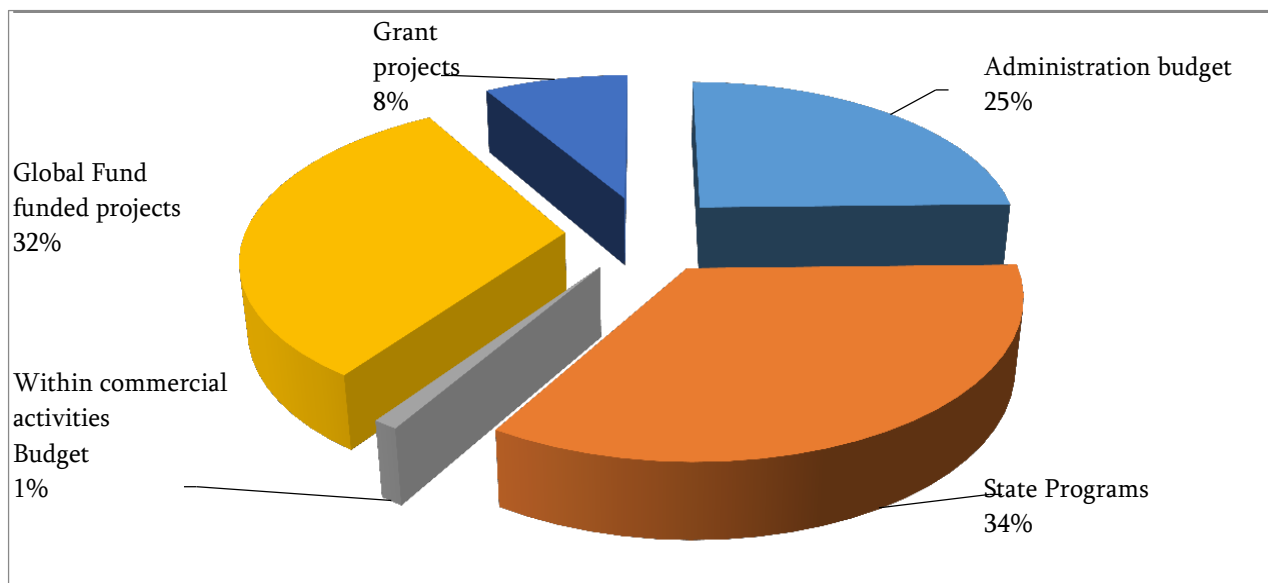
Administration budget – 7,071.5 thousand laris;

State programs – 9,746.9 thousand laris;

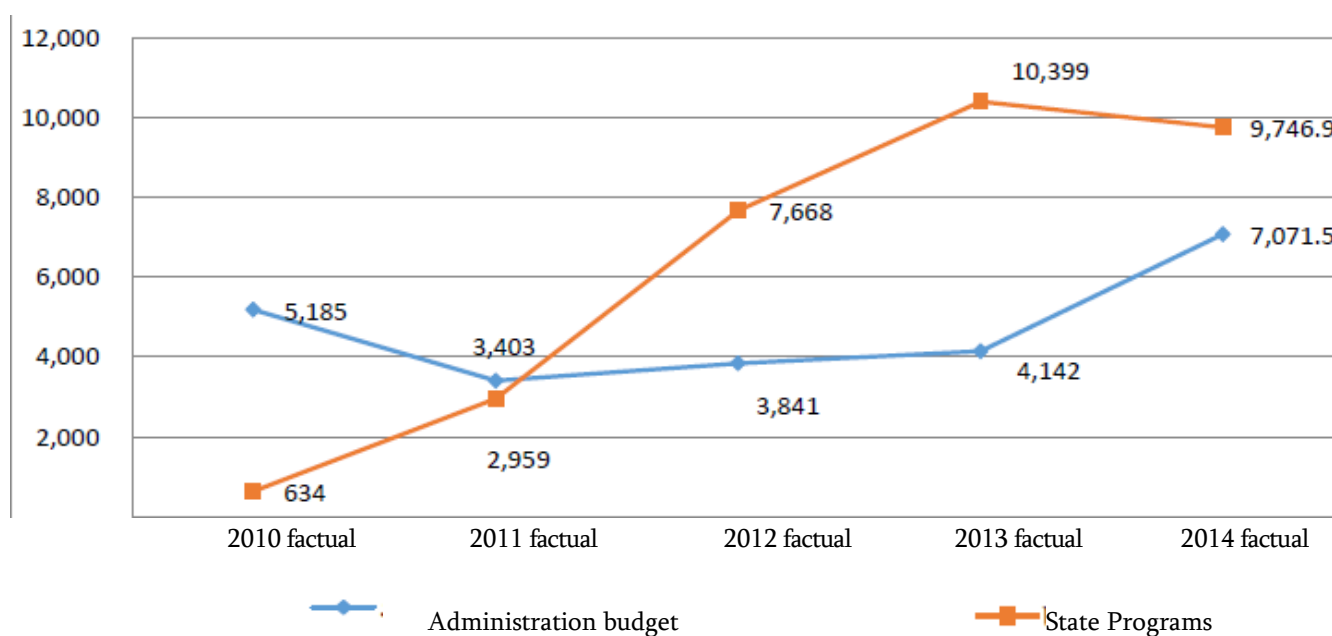
Global Fund – 9,106.8 thousand laris (in addition, direct transfers from donors – 5,365.2 thousand laris);

Grant projects – 2,458.6 thousand laris;

Commercial activity – 307.5 thousand laris.



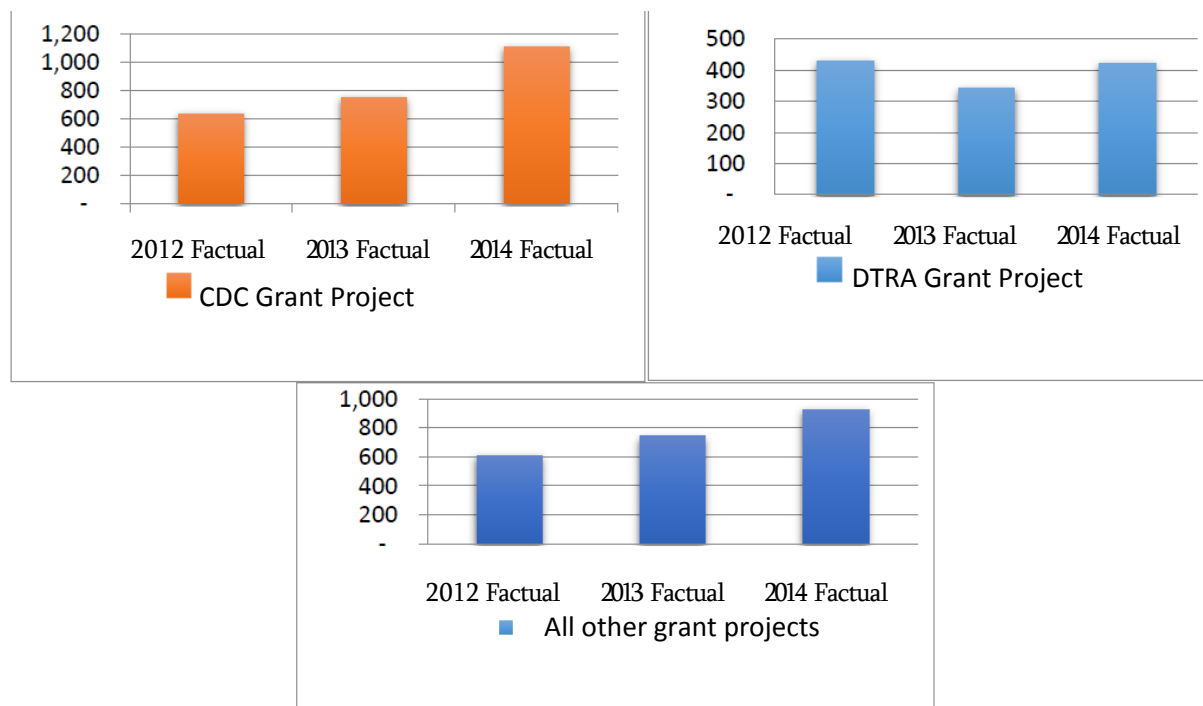
State Budget funding in 2010 -2014
(Thousand laris)



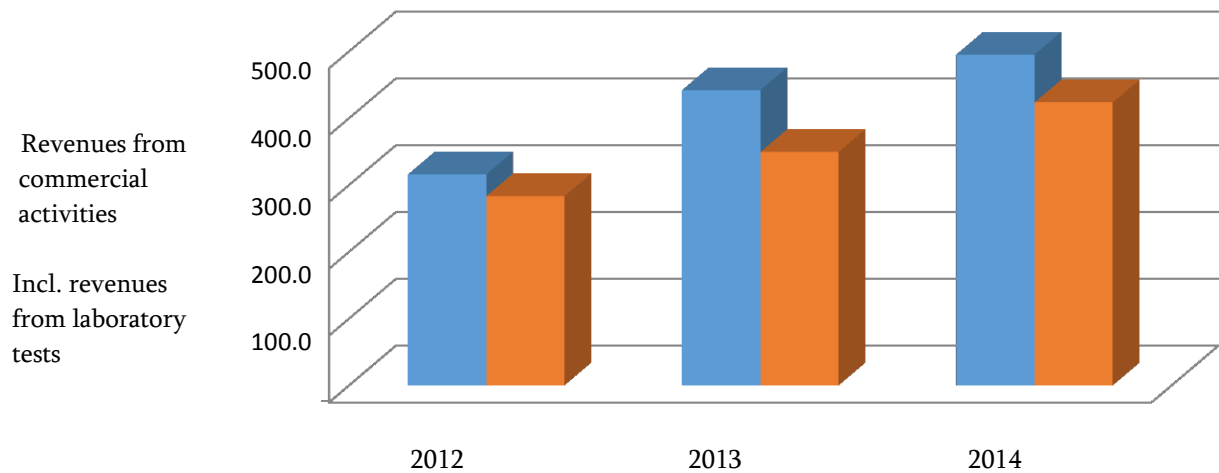
Performance of the State Budget for 2014 (thousand laris)

Name	2014 Approved Plan	2014 Specified Plan	2014 Factual	%
Total	20,189	17,403	16,818	97%
Administration expenses (35 01 03)	8,055	7,288	7,072	97%
Protection of Public Health	12,134	10,115	9,747	96%
Early Detection and Screening (35 03 03 01 01)	2,000	1,514	1,475	97%
Immunization (35 03 03 02 01)	4,770	4,432	4,431	100%
Epidemiological Surveillance Program (35 03 03 03)	1,500	1,065	919	86%
Safe Blood (35 03 03 04)	1,200	1,093	1,073	98%
Prevention of Occupational Diseases (35 03 03 05)	270	270	270	100%
TB Management (35 03 03 07 02)	1,100	900	849	94%
HIV/AIDS (35 03 03 08 02)	750	330	323	98%
Mother and Child Health (35 03 03 09 02)	544	352	339	96%
Universal Access Program to Quality Diagnosis and Treatment of All Forms of TB (35 03 03 13)		160	68	42%

Compared to previous years, donors' funding has been substantially increased, which amounted to 11,565.4 thousand laris in 2014. The Center was determined to be the entity to implement Global Fund's projects, within the framework of which 9,106.8 thousand GEL were spent (additional direct transfers from donors were 5,365.2 thousand laris); The CDC-funded grant project spending amounted to 1,107.3 thousand laris and the DTRA-funded – 423.2 thousand laris; all other grant projects totaled 928.1 thousand laris.



In 2014, revenues from commercial activities has increased by 12% vs. the previous year and amounted to 495.1 thousand laris, including revenues from laboratory tests has increased by 21% and amounted to 423.4 thousand laris.



PC equipment was renewed (90 personal computers; 36 printers; 110 UPSs etc.); so called ‘mini press’ and ‘cold chain’ equipment were purchased (freezing rooms, cold boxes, a vehicle etc.).

In addition, diagnostic consumables for the prevention of Hepatitis C and the Personal Protective Equipment for Ebola response were also purchased.

Lugar Center’s laboratory building, together with the fixed assets and consumables inside the building, as well as the DTRA-funded fixed assets available in regions, have been included in the Center’s asset list.

XII. Administrative Events

- Measures for launching the grant project (subject: Coverage of the Utility, Security and Other Target Service Expenses through Provision of the TADR Service Expenses at the LEPL L. Sakvarelidze National Center for Disease Control and Public Health and its Subordinate Laboratories in Kutaisi and Batumi (ZDLs), and Gori, Telavi, Akhaltsikhe, Zugdidi, Ambrolauri, Poti, and Ozurgeti (LSSs)) funded under the mutual cooperation agreement between the NCDC&PH and the DTRA's sub-contractor company CH2MHILL are completed.
- The work has been completed and the Joint Transition Agreement (JTA) has been signed between the Georgian and US Governments for Sustaining the Unified Laboratory System for Detection, Surveillance and Response to Extremely Dangerous Pathogens, and the Richard Lugar Central Public Health Reference Laboratory during the Transition Period.
- By Ordinance No 2709 of the Parliament of Georgia of 17 October 2014, the Agreement between the Georgian and US Governments on Transition of Costs and Responsibilities Related to the Provision of the Unified Laboratory System for Detection, Surveillance and Response to Extremely Dangerous Pathogens, and the Richard Lugar Center for Public Health Research was approved.
- DTRA's sub-contractor company CH2MHILL has purchased 2 minivans for the Center to transport the Center's staff to Lugar Center on a daily basis.
- At Alekseyevka (including the territory of the Lugar Center's laboratory building) a new, amended cadastral survey drawing was prepared, based on which an amended (expanded) plot of land with total area of 45,657 square meters was registered in use of the NCDC&PH. A technical task was elaborated for designing the Center's new administration building (campus). The issue of putting the Lugar Center building into operation during the reporting period was resolved in full compliance of the legislation.
- The information was sent to the Health Committee of the Parliament of Georgia on a weekly basis, in the format of the coordination group set up for the purpose of better coordination with the Ministry of Labor, Health and Social Affairs of Georgia (coordination of information preparation regarding the planned events and submission of the information to the Health Committee of the Parliament).
- A small publishing section was set up in the Center during the reporting period.
- The central office is refurbished; central heating system is set up, and the Imereti and Ajara Office of the Regional Department and the offices of divisions are also refurbished.

XIII. Elaboration of Laws and Normative Documents

- Compliance of the correspondence, which was prepared/reviewed by the departments and directly by the offices/divisions and approved, with the applicable legislation was defined.
- Legal examination of the administrative-legal acts and administrative transactions of the Center was performed and appropriate reports were prepared.
- Applications and letters of the concerned persons were reviewed under the established procedures, within competence, and were appropriately responded to.
- A number of grant documentation was prepared according to Ordinance No126 of 14 March 2011 of the Government of Georgia on Measures to be Taken by Appropriate Institutions of the Executive Authority and by Legal Entities under Public Law Subject to State Control in Relation to Grants” for presenting at a Government session.
- A number of documentation was prepared and sent to the MLHSA regarding the import of unregistered pharmaceuticals into Georgia by avoiding registration.
- Case materials for judicial resolution of disputes regarding the Center’s activities were studied and prepared for judicial proceedings.
- Representation of the Center, on its behalf and under the established procedure, in the court was provided; its rights and interests were defended (there were 2 judicial trials regarding the salary payable).
- Judicial disputes were registered and processed, and a registration and information base for judicial proceedings was created.
- Agreements for laboratory investigation were concluded and registered.
- Different types of agreements necessary for functioning of the Center were concluded.
- The Statutes of the LEPL L. Sakvarelidze National Center for Disease Control and Public Health were prepared and issued.
- To comply with Ordinance No 85 of 16 January 2014 of the Government of Georgia on Technical Regulations to Regulate Certain Fields, a series of drafts of technical regulations affecting human health and/or environment factors, which are assigned to technical regulations, were coordinated along with relevant advisors, and were sent to the MLHSA for submitting them to the Government of Georgia for approval.
- Drafts of the following legal acts regarding the Center’s activities were prepared:
 - the Law of Georgia on Making Amendments to the Law of Georgia on Public Procurement (issued);
 - the Law of Georgia on Making Amendments to the Law of Georgia on Public Health (reviewed on a session of the Government of Georgia);
 - Decree No 690 of 14 April 2014 of the Government of Georgia on Measures to be Taken in 2104-2018 for the Prevention of Rabies;
 - Decree No 1023 of 9 June 2014 of the Government of Georgia on Measures to be Taken for the Introduction of Population-based Cancer Registry;
 - Decree No 1807 of 1 October 2014 of the Government of Georgia on Approval of the Prompt Response Plan to Cases Caused by Ebola Virus;
 - Decree No 1817 of 2 October 2014 of the Government of Georgia on Measures to be Taken for the Management and prevention of the Crimean-Congo Hemorrhagic fever Outbreak;
 - Decree No 1724 of 19 September 2014 of the Government of Georgia on Measures to be Taken for Controlling the Viral Meningitis Outbreak Caused by the ECHO30 Enterovirus;
 - Decree No 1799 of 30 September 2014 of the Government of Georgia on Measures to be Taken for the Improvement of Operation of the Vaccines Cold Chain System in Georgia;
 - Decree No 1484 of 26 September 2014 of the Government of Georgia on Measures to be Taken for Conducting the Population-based Survey of Hepatitis Spreading in Georgia;
 - Ordinance No 1817 of 5 September 2014 of the Government of Georgia on Approval of the Maximum Permissible Norms of Ingredients of Tobacco Products Intended for Sales in Georgia, the Rules of Measurement and Regulation of the Norms and the Technical Regulations for Medical Warnings to be Indicated at Tobacco Products Points of Sale, on Advertisement, and Boxes and Packs;
 - Ordinance No 543 of 11 September 2014 of the Government of Georgia on Designating the LEPL L. Sakvarelidze National Center for Disease Control and Public Health as the Scientific Grantor;
 - Ordinance No 347 of 13 May 2014 of the Government of Georgia on Approval of the Response Plan to Extremely Dangerous Pathogens and Biological Incidents;

- By Ordinance No **2709** of the Parliament of Georgia of **17 October 2014**, the Agreement between the Georgian and US Governments on Transition of Costs and Responsibilities Related to the Provision of the Unified Laboratory System for Detection, Surveillance and Response to Extremely Dangerous Pathogens, and the Richard Lugar Center for Public Health Research was approved.
- Drafts of the order of the Minister of Labor, Health and Social Affairs of Georgia On Making Amendments to Order No 01-27/N of 23 May 2012 of the Minister of Labor, Health and Social Affairs of Georgia on Rules for the Maintenance and Provision of Medical Statistical Information (issued);
- A draft of the joint order of the Minister of Labor, Health and Social Affairs of Georgia and the Minister of Justice of Georgia on Approval of the Rules of Details and Forms of the Medical Certificates of Birth and Death, their Completion and Sending (sent to the Ministry).
- In 2014, the LEPL L. Sakvarelidze National Center for Disease Control and Public Health – received 130 applications for issuing public information, which was completely satisfied. There was no request for amending the public information.

XIV. Important Visits and Meetings

- On 1 September 2014, Prime Minister Irakli Gharibashvili, together with the Minister of Labor, Health and Social Affairs of Georgia Davit Sergeenko and the US Ambassador to Georgia Richard Norland, visited the Richard Lugar Center for Public Health Research. On 10 October 2014, members of the Parliamentary Majority and Minority paid an information visit to the Richard G Lugar Center for Public Health Research, which was organized by the Committee for Health and Social Affairs of the Parliament of Georgia and by the L. Sakvarelidze National Center for Disease Control and Public Health of the Ministry of Labor, Health and Social Affairs of Georgia.
- In September 2014, Mr. John M. McHugh, the United States Secretary of the Army, paid a 2-day official visit to Georgia; within the framework of the visit, Mr. McHugh visited the Richard G. Lugar Laboratory of the NCDC&PH. Mr. McHugh also had a meeting with the Tbilisi staff of the US Army Medical Research Center and listened to a brief report on the ongoing and planned joint researches. The topics discussed at the meeting were surveillance of the infectious diseases, biomedical research, training of the personnel, holding of the exercises etc.
- On 26 September 2014, the Global Health Security Summit was held in the White House in Washington led by the political administration of the United States.
- Within the framework of the World Congress of Chemical, Biological, Radiation and Nuclear Sciences and Outcomes Management, members of the Georgian Government, representatives of the Executive Authority, representatives of the US military administration, and representatives of the diplomatic corps accredited in Georgia and the CBRN experts from 38 countries visited the Richard Lugar Center Laboratory.
- The management of the Georgian National Academy of Sciences and representatives of various scientific-research institutes of the Academy visited the Richard Lugar Laboratory.
- At the initiative of Ms. Elizabeth George, the delegation of the Biological Threat Reduction Program visited the National Center for Disease Control and Public Health.
- The WHO Regional Office for Europe visited the Measles/Rubella Laboratory at the National Center for Disease Control and Public Health.
- On 17 October 2014, a meeting was held with representatives of the Millennium Challenge Corporation; DTRA representatives also attended the meeting.
- on 21-23 July 2014, representatives of the U.S. National Cancer Institute, Ms. Susanne Radtke (Center for Global Health (CGH) European Office at the US National Cancer Institute, Liaison Office Program Director European Activities), and Mr. Daniel McBryer (Liaison for International Partnerships at the National Cancer Institute's Center for Global Health, Director's Office) visited the NCDC&PH.
- On 12 September 2014, a meeting was held with the representatives of the Global Fund to Fight HIV/AIDS, Malaria and Tuberculosis, which was attended by the representatives of the Ministry of Labor, Health and Social Affairs of Georgia, international organizations and non-governmental sector.
- During the period between 28 April and 5 May 2014, representatives of the WHO Mission made an evaluation of the acute flaccid paralysis surveillance system sensitivity to timely detect poliovirus circulation, which aimed to work out recommendations for ensuring and maintaining the high quality of the system. The issue was studied in Tbilisi and at the treatment and prevention facilities of 11 near-border municipalities of Telavi, Sagarejo, Lagodekhi, Marneuli, Gardabani, Akhaltsikhe, Akhalkalaki, Borjomi, Kobuleti and Rustavi.
- A visit of the IGME mission.
- In February 2014, specialists of the Non-Communicable Diseases Department of the NCDC&PH were sent on a business trip to Copenhagen, Denmark, in the WHO Regional Office for Europe to present the national strategies.
- Visit of the WHO Tobacco Control experts to Georgia.
- The Assessment Mission of International Atomic Energy Agency and WHO's joint Instrument imPACT (Program of Action for Cancer Therapy).
- On 4 July 2014, a working meeting of the anti-microbial resistance was held.
- During the working meeting – “Biology of Anthrax” (Cardiff, the UK), a report was made regarding the project on Anthrax decontamination. Results of the current “Anthrax vaccines” were reviewed and a detailed plan for the next one year was elaborated. Further, commencement of a new regional project was initiated, in which scientists from the UK, Turkey, USA and Georgia will participate.
- At the EDENext's annual meeting (Rovaniemi, Finland), the group's activity was summarized; researches that have been conducted during the last three years were reviewed; a plan for the final researches to be conducted in the fourth year was elaborated.
- At the 23rd meeting of the European Network for Diagnostics of “Imported” Viral Diseases (Malta, Italy),

information regarding the epidemiologic situation in relation to viral diseases imported in Europe was discussed.

- At the regional meeting – “Laboratory Capacity Enhancement” (Copenhagen, Denmark), information was discussed regarding the current condition of the laboratory systems within the healthcare system network in the former Soviet Union countries, and regarding the future plans.
- Sharing of the AMR experience (Vilnius, Lithuania) – during the meeting with the management of the Institute of Hygiene signing of a Memorandum of Cooperation and elaboration of joint projects were planned; use of Lithuania’s successful experience in the process of surveillance of the infections related to medical service.
- A working meeting – “New Rotavirus Vaccine Post-introduction Evaluation”.
- A working meeting – “Assessment of the State Program’s Immunization Component Implementation Results for 2013, and Assessment of the Poliomyelitis surveillance System Sensitivity”.
- A working meeting – “Improvement of the Electronic Integrated Disease Surveillance System”.
- With the DTRA support, a 2-day regional working meeting was held between Georgia, Ukraine and Armenia regarding “the Electronic Integrated Disease Surveillance System (EIDSS)”.
- On 10 September 2014, activities carried out within the framework of the projects (GG, GDD, CDC, and University of Florida) were reviewed at Lugar Center; in total, 13 projects were reviewed.
- A working meeting – to review the National AMR Strategy.
- A working meeting on Health 2020 and NCDs.
- Review of the report on “the Death Registration Quality Assessment in the Selected Regions of Georgia”.
- A working meeting – to review the “Joint Transition Plan between the Georgian and US Governments”.
- A working meeting – to review the “National Cancer Control Strategy and Action Plan”.
- An international working meeting in cooperation with the South Caucasus Representation of the Centers for Disease Control and Prevention (CDC) – “Hepatitis C Control Plan for Georgia: Hepatitis C Elimination Model”.
- A working meeting – to review the “Draft of the Hypertension Guidelines”.
- Together with the WHO Mission, review of the results of anti-measles supplementary vaccination measures implemented in 2013 and implementation of the similar actions in 2014.
- By the end of the GAVI assistance period (2018), an action plan to ensure evaluation of financial sustainability of the immunization component in the healthcare sector, determination of the country’s future preparedness and sustainability of the State Immunization Program will be elaborated.
- Within the Cervical Cancer Screening program, a meeting dedicated to the issues of introduction of the organized screening etc.
- On October 23-24, 2014, a regional Meeting of ESPAD - European School Survey Project on Alcohol and Other Drugs was conducted in Tbilisi attended by the representatives of ESPAD Head Office and different countries (Poland, Ukraine, Moldova, Russia, Armenia, and Azerbaijan).

XV. Cooperation with International Organizations

- The NCDC&PH keeps close cooperation with international government, non-government and private organizations (WHO, CDC, GFTAM, GAVI, BP, NAMRU 3, EU/UNDP, UNFPA, UNICEF, DOD/DTRA, USAID, DHHS, WRAIR, and NIH) and with universities and research centers (University of Florida, University of Maryland, Emory University, John Hopkins University, University of Arizona, the Bundeswehr Institute of Microbiology, University of Oslo, etc.).
- In 2014, the signing ceremony of the Memorandum of Understanding between the National Center for Disease Control and Public Health of Georgia and the Institute for Health Metrics and Evaluation of Washington University (IHME) was held; the Memorandum of Understanding intends to improve the estimates of the burden of diseases, injuries, and situations caused by risk factors using the Global Burden of Disease Study (GBD) methods managed by the IHME).

XVI. Business trips

International business trips

In 2014, the NCDC&PH carried out 240 business trips; out of them, expenses for 182 business trips were completely financed from different sources, 48 business trips were financed by projects, and the Center covered the expenses for 2 business trips.

The Center partially financed the following 8 business trips:

- 92 specialists participated in: joint researches (11), study courses, workshops, trainings (82), experience sharing (9), and discussions (4);
- poster presentations (24), reports/speeches (16), posters (34) and abstracts (34) were presented at various levels;
- 65 specialists from the NCDC&PH participated in international conferences, simposiums, congresses, etc.
- 81 specialists participated in working meetings at various levels;
- 8 specialists have mastered new methods.

In-country business trips

In 2014, for performing activities within the country (epidemiologic investigation, monitoring, collection of clinical material, etc.), 562 business trips were carried out, with the participation of 1,287 specialists/6,615 days, including: the Center's Office budget covered the expenses for business trips of 565 specialists; business trips of 51 specialists were covered from the Center's internal revenues, 18 – through partial funding of the Center, 304 – by various donor organizations and business trips of 349 specialists were funded through programs.

Business trips of 653 specialists were funded from non-state sources, including by:

- DTRA, Battelle, CH2MHILL – 177; Black&Veatch – 55; USAID – 18; USAMRID – 5; UNFPA – 12; WHO – 1, CDC – 2, other – 34;
- The project – “Transmission of Zoonotic Influenza between Humans, Pigs and Poultry” – 12;
- The project – “Enforcement of 100% Smoke-Free Policy in Medical and Educational Institutions” – 6;
- The project – “Environmental Surveillance of Poliomyelitis in Georgia 2013” – 16;
- The project – “Sustaining the Influenza Surveillance Networks and Response to Seasonal and Pandemic Influenza by the National Health Authorities outside the United States” and “Supplementary Component” – 20;
- The project – “on Target Spending of Funds for the Promotion of Introduction of Pneumococcal Vaccines in Georgia” – 8;
- The project – “Georgia Tobacco Survey” – 26;
- The project – “Georgia Youth Tobacco Survey” – 17;
- The project – “TAP8” – 13;
- The project – “Epidemiology and Ecology of Tularemia in Georgia” – 78;
- The project – “Global Disease Detection” – 113;
- The Global Fund projects – 24.
- Through Center's budget – 616, including:
 - Through Center's Office budget – 565;
 - From the Center's internal revenues – 51.
- through partial funding – 18, including:
 - Center's Office budget and DTRA – 7;
 - Center's Office budget and WHO – 3;
 - Center's Office budget and CDC – 2;
 - Center's Office budget and “Georgia Youth Tobacco Survey” – 3;
 - Center's Office budget and the GG-21 project – “Epidemiology of human diseases and surveillance of especially dangerous pathogens in Georgia” – 2;
 - Center's Office budget and the Global Fund project – 1.
- Objectives of in-country business trips are as follows:
- Participation in trainings; conducting trainings; attending trainings as observers – 321 specialists
- Performance of various investigations – 450,
- Transportation of samples – 114,
- Conduct of monitoring – 121,

- Distribution of vaccines – 75,
- Reporting and attending consultations – 88,
- Medical examination – 27,
- Participation in working meetings – 5,
- Participation in conferences – 22 employees,
- The rest – 64 employees.

XVII. Relations with mass media

The NCDC&PH, in coordination with the PR Department of the MLHSA, kept communicating information to the public. The following means of information were actively involved in this process: television, radio, information agencies, print media, internet TV, internet portals, etc. After being broadcasted, the main part of the material was processed and posted to the Center's Facebook page and the following web-pages: myvideo, youtube, Twitter; press releases about each meeting, press-conference, briefing, conference and event were prepared for the information agencies and journalists, as well as photo and video material.

- in 2014, 462 interviews were recorded for various TV channels and internet TVs;
- 79 TV programs and 137 TV items were prepared;
- 9 live broadcastings were prepared;
- 6 visits to the press-club were prepared;
- 26 radio programs and 26 radio interviews were prepared;
- The information campaign with respect to MMR, CCHF, Meningitis and pneumococcal vaccines was implemented;
- 24 articles and 122 telephone interviews were published on web pages;
- 26 articles were published in the print media;
- 17 press-conferences, 5 briefings, working meetings, visits, conference were held – 4;
- The Center's new web page was prepared.
- Lectures
- Lecture-workshop – “Harmful Effect of Lead on Health and Modern Methods of Treatment in Case of Lead Poisoning”;
- Countrywide course of lectures – “Diseases Accompanied by Hemorrhagic Fevers”.

World Days

The following important World Days were widely celebrated: Rabies, Psoriasis, International Blood Donor, Cancer, Breast Cancer, Tuberculosis, Hypertension, Hepatitis, against Drug Abuse, Heart, AIDS, Antibiotics World Days; World No Tobacco Day, the World Autism Awareness Day and World Health Day; press-conferences dedicated to the breast cancer prevention campaign, the immunization week, CCHF and the spread of enterovirus infection.

Weeks

European Immunization, Breastfeeding, Salt Awareness, Hypertension, and Rabies Weeks and the Breast Cancer Awareness Month were held.

Various ceremonies

- The signing ceremony of the Memorandum of Understanding between the Institute for Health Metrics and Evaluation of Washington University and L. Sakvarelidze National Center for Disease Control and Public Health of Georgia was held.
- During the European Immunization Week, the awarding ceremony of the supporters, organizations and media was held.
- International Blood Donor Day – the awarding ceremony.
- The US Ambassador's congratulations – for Georgian, Armenian and Azerbaijani graduates of the South Caucasus Field Epidemiology and Laboratory Training Program.
- Within the framework of the USAID/SUSTAIN project, the action – “Georgia's Marathon for Saving Life” was held, organized by the NGO Women's Health and Welfare Union “Hera” and the National Screening Center.