

Role of the U.S. Donor and Partner Organizations in the Development and Strengthening of Public Health, Bio-medical and Bio-technological Potential in Georgia



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Tbilisi, Georgia

2018

Acronyms:

AMR	Antimicrobial Resistance
BNSR	Bio-surveillance Network of Silk Road Countries
BSL	Bio-security Level
BTEP	Biological Threat Engagement Program
CAESAR	Central Asia and Eastern European Network for Surveillance of Antimicrobial Resistance
CBEP	Cooperative Biological Engagement Program
CDC	Centers for Disease Control and Public Health
CPHRL	Center for Public Health Reference Laboratory
CRDF	Civil Research and Development Foundation
DTRA	Defense Threat Reduction Agency
EC	European Commission
EIDSS	Electronic Integrated Disease Surveillance System
EQA	External Quality Assurance
GHSA	Global Health Security Agenda
GIS	Geographic Information System
GIZ	German International Development Agency
HIS	Health Information Systems
IHR	International Health Regulations
IMF	International Monetary Fund
ISO	International Organization for Standardization
ISTC	International Science and Technology Center
JICA	Japan International Cooperation Agency
LIMS	Laboratory Information Management System
LSS	Laboratory Surveillance Station
NIH	National Institutes of Health
NMRC	Navy Medical Research Center
PNNL	Pacific North-West National Laboratory
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WHO	World Health Organization
WRAIR	Walter Reed Army Institute of Research
ZDL	Zonal Diagnostic Laboratory

Since 1992, after the establishment of diplomatic relations with the United States of America and as of today, Georgia has achieved significant progress¹ in terms of development and sustainability of various fields within the country. The United States is the major donor and strategic partner country of Georgia. Through the U.S. financial and technical support Georgia was able to develop such spheres as: State Governance, Economics, State Defense and Security, Commerce, Agriculture, Democratic Institutions, Science, Cultural Relations etc.

In this partner relationship, the collaboration along the lines of improving and strengthening processes in fields such as Healthcare, Public Health and Bio-Medicine in Georgia, is the most noteworthy.

In the 90's of the previous century, after the collapse of the Soviet Union and re-establishment of independence of the country, the Georgian Healthcare system and its medical and prophylactic-preventive directions faced numerous and critical challenges. The state funding on healthcare was dramatically reduced and the state centralized leverage was disrupted. In 1993-1994 the Government started to think over radical reforms in the healthcare system and provision of various funding resources and mechanisms.

At that time, the assistance programs of international donor organizations (WHO, World Bank, UNDP, UNHCR, IMF, JICA, GIZ, USAID, CDC, EC, etc.) played a great role in improvement of the whole system including development of human resources. In this regard, the American partnership relations are the most significant.

Since the very beginning of collaboration the projects funded through the United States Agency of International Development (USAID) contributed much to elaboration of healthcare reforms in the transition period. The Tbilisi-Atlanta partnership program is a good example which has made big shifts in development of the healthcare sector from 1992 to 1999. New approaches provided improvement of management systems; diseases prevention and treatment, continuity and quality of medical services.

In the mid 90's (1995-1996), along with various processes, the healthcare system also began to modernize public health services, that had been under the Soviet regime, under the Ministry of Health / Sanitary-Epidemiological State Service - Vertical Control and Executive Management Authority.

In 1995, the state recognized preventive medicine as a priority, and, therefore, the need was caused for reorganization of sanitary-epidemiological service on the basis of amendments to the legislation in two directions: sanitary control and epidemiological surveillance (in compliance with modern public health concepts).

¹ <https://www.state.gov/r/pa/ei/bgn/5253.htm>

In 1996 the above-mentioned directions were divided into two levels by functions and responsibilities: Public Health Management Department (Central - organizational authority) and local municipalities.

The same year, along with a large-scale reorganization of Sanitary-Epidemiological Service, the National Center for Disease Control was established on the basis of the Research Center for Especially Dangerous Pathogens of Georgia. The historic basis for the Research Center was an Anti-Plague Station, a part of Anti-Plague stations network, operated under the Soviet Ministry of Health.

In the following years the Medical Statistics Center was integrated into the National Center for Disease Control (in 2003) followed by merging of the Public Health Department in 2007. After this reorganization in the country, there was established the Legal Entity of Public Law - a central public health and research institution under the authority of the Ministry of Labour, Health and Social Affairs of Georgia – The National Center for Disease Control and Public Health (NCDC).

Currently, early detection and prevention of diseases and epidemiological surveillance is the core



mandate of the National Center for Disease Control and Public Health. A precondition of its implementation is a strong infrastructure, modern laboratories, and most significantly, highly trained human resources. This allows the NCDC to promote and implement the measures for prevention of communicable and non-communicable diseases, monitoring, reduction of harm caused by environmental and other behavioral risk-factors on the basis of evidence-based information through public health preparedness and finally,

timely response to threats.

Since the mid 90's, in parallel to the above-mentioned changes, the bio-medical fields started to be developed under the assistance of American institutions. CRDF, Fogarty International, BTEP, ISTC are those organizations that supported the Georgian scientists and public health professionals in skills development, in sharing knowledge and experience through participation in international conferences, workshops and training courses. Moreover, dozens of scientific-research projects were funded that were mostly implemented on the basis of the NCDC.

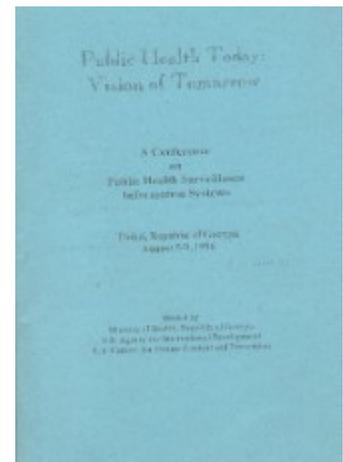
Collaboration with U.S. organizations was reflected by financial support of the infrastructural, surveillance and research projects at the institutional level. Due to the mandate, the NCDC was a main implementer of those projects. It was notable to start collaboration with the U.S. National Institutes of Health (NIH) in line with conducting a number of joint conferences and research projects. As of today, through the NIH funding, several medical institutions of Georgia including the NCDC, have been awarded grant projects of around 600,000 USD.

In the decade of the 90's hard social situation, inefficient implementation of preventive health measures, poor data quality and limited information management capacity resulted in an increased incidence of infectious diseases in the country. Therefore, a need arose for re-establishment of disease prevention and control systems.

In that period with a purpose to achieve communicable disease control and timely response to outbreaks, as well as to technically support various health-related risk-factors and surveillance projects, the NCDC started collaboration with the U.S. Centers for Disease Control and Prevention (CDC) – leading national institution under the Department of Health and Human Services with a mission to prevent and control diseases, trauma and disability. The CDC's structural and functional model was used during establishment of the National Center for Disease Control of Georgia in 1996.



The first mission of the CDC in Georgia took place in 1994-1996. Within the scope of the mission the first cohort of Georgian epidemiologists was trained. The priority areas of the mission were: diphtheria and vaccine-preventable diseases. Among the several surveys, conducted through the support of the CDC/ Atlanta, one of them was the most remarkable – a Diphtheria Survey. By this time publication of Epidemiological Bulletins was initiated.



In 1996 the first joint conference with the CDC/Atlanta “Public Health Today: Vision of Tomorrow” was dedicated to public health surveillance and information systems.

Since the late 90's three large-scale surveys (1999, 2005, 2010) on Reproductive Health have been conducted in Georgia with technical assistance from the CDC / Atlanta along with other international organizations.

The goal of the RHS was to provide the Ministry of Labour, Health and Social Affairs, international organizations, governmental and non-governmental sectors, working with mothers and children, with the information and indicators related to: pregnancy and child birth, sexual activity, contraception, abortions, health services for women, maternal and child health, women's health, etc. Since 2001, through BTEP / ISTC projects in collaboration with the CDC epidemiological challenges of botulism, *Helicobacter* infections, AMR, Tuberculosis, amebiasis and other public health issues were investigated during the studies.

With the aim of improving disease surveillance in the country, collaboration through the USAID financial and the PHR plus technical assistance, in 2002-2005 there was implemented a very important project in terms of development of Health Information Systems (HIS) covering two components: the immunization management information system and the surveillance of vaccine-preventable diseases.

By the project objectives it was expected to yield improvements in health outcomes by reducing VPD mortality and morbidity through improved tracking and immunization of the child population, prompt and adequate response to disease outbreaks, and increased efficiency of HIS operations. Strategic planning of the project was coordinated with the principal stakeholders from the country's multi-disciplinary national and regional expert groups, including group members from the Ministry of Labor, Health and Social Affairs (MoLHSA), the Department of Public Health and the National Center for Disease Control and Medical Statistics (NCDC).

NCDC's collaboration with U.S. institutions with regard to development of public health, epidemiological surveillance and biosciences, gained more significance after the launching of the Cooperative Biological Engagement Program (CBEP)² in Georgia and involvement of its implementing agencies.

By the end of the 80's and beginning of the 90's of the 20th century, the U.S. Department of Defense (DoD) established the biological threat reduction programs to operate with post-Soviet countries to prevent the proliferation of expertise, dangerous pathogens and technologies.

One of the programs funded by DoD was created in 1991 under the Nunn-Lugar Act (authored by Senators Richard Lugar and Sam Nunn) – the Cooperative Biological Engagement Program (CBEP) directly addressed global health security threats by working with post-Soviet countries to improve biosafety, biosecurity and disease surveillance.

² Cooperative Biological Engagement Program

<http://www.dtra.mil/Portals/61/Documents/Missions/CBEP%20FY15%20Annual%20Accomplishments.pdf?ver=2016-09-16-150152-690>

Over the years, the program has made significant contributions to international and homeland security. Assistance to partners across the former Soviet Union has been provided to:

- **Consolidate and secure dangerous microbe cultures into central reference lab “museums”;**
- **Improve the safety and security of biological facilities;**
- **Enhance partner countries’ capabilities to detect, and report bio-terror attacks and potential epidemics in a reasonable time;**
- **Engage scientists with biological weapon-related expertise in research that supports force protection, medical countermeasures, diagnostics, and modeling**



In Georgia the Defense Threat Reduction Agency (DTRA), one of the structural units of the U.S. DoD, started to implement the Program. It is a Combat Support Agency for countering weapons of mass destruction (chemical, biological, radiological, nuclear and high-explosives). DTRA's main functions are threat reduction, threat control, combat support, and technology development.

The CBEP is based on objectives of the United States and Global Health Security that are conditioned by risks of especially dangerous infection outbreaks. The program promotes best practices in the field of biological security, improving Georgia's potential in detecting and reporting of communicable diseases, as well as introduction of international cooperation in research.

In the 90's of the last century and in the framework of the DTRA and the Nunn-Lugar CTR program, partnership with the Georgian Government was established.

In 1997, the “Agreement³ between the United States of America and Georgia Concerning Cooperation in the Area of the Prevention of Proliferation of Weapons of Mass Destruction, and the Promotion of Defense and Military Relations” was signed, defining areas of cooperation, including prevention of proliferation of nuclear, biological and chemical weapons and related materials. In 2002 “Agreement⁴ between the Department of Defense of the USA and Ministry of Defense of Georgia Concerning Cooperation in the Area of Prevention of Proliferation of technology, Pathogens and Expertise Related to the Development of Biological Weapons” was signed.

³ <https://www.matsne.gov.ge/ka/document/view/1210481>

⁴ <https://www.matsne.gov.ge/ka/document/view/2147>

In order to achieve the Program objectives there was a need to develop unified systems on disease detection, surveillance and response in the country and incorporate them under the “One Health” concept.

Several decades ago “One Health” principles gained great importance on national, regional and global levels as a multi-sectoral and cross-disciplined approach, and its goal is to achieve optimal results of healthcare by recognizing relationships between humans, animals, plants and their joint environment. Healthcare workers, vets, ecologists act under “One Health” principles, cooperate, study and control existing public health threats and the reasons for their distribution.

In the implementation process of CBEP the following government agencies were engaged: From the Georgian side - National Center for Disease Control and Public Health (Ministry of Labour, Health and Social Affairs), Laboratory of Ministry of Agriculture (Ministry of Environment Protection and Agriculture) and National Food Agency; from the U.S. side – DTRA (as a key player), partially CDC and WRAIR – Walter Reed Army Institute of Research and Department of Agriculture (USDA).

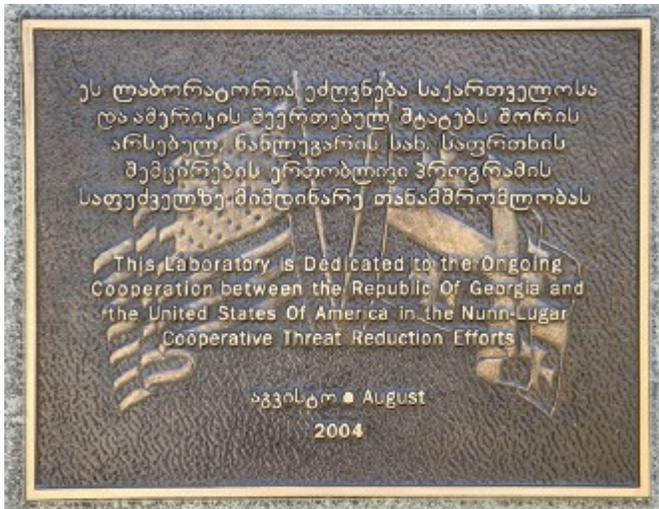


In the beginning of the operation of the Program (in the first decade of 2000) to establish a unified laboratory surveillance network, DTRA provided financial support for construction of 3 zonal laboratories (ZDLs) in Tbilisi, Kutaisi and Batumi as well as provide them with modern equipment. Through DTRA’s assistance the regional laboratory surveillance stations (LSSs) in Telavi, Gori, Akhaltsikhe, Ozurgeti, Zugdidi, Ambrolauri were renovated.



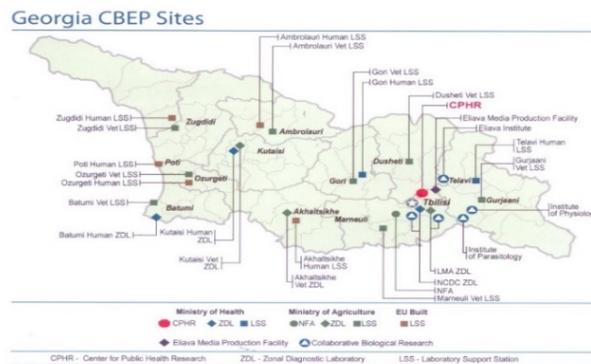
The key component of the Program actually started in 2007 when the construction of Public Health Research Reference Laboratory started. The Laboratory with its mission and functions should be subordinate to the National Center for Disease Control and Public Health of Georgia. In 2010 under the tremendous technical and financial support the construction of CPHRL was finalized. The country received a modern, equipped, BSL 3 research institution, later known as the Richard Lugar Center for Public Health Research (the same as Lugar Center) named after the Senator – Richard G. Lugar.





By 2013 the main achievement of the Cooperative Biological Engagement Program was the establishment of human and animal health surveillance a unified laboratory network which includes the 22 laboratories across the country that are under the Ministries of Labour, Health and Social Affairs and Environment Protection and Agriculture as well as the central reference laboratory (Lugar Center).

The latter was merged with the National Center for Disease Control and Public Health in May, 2013 and in August of the same year became fully operational. ⁵



The key mandate of the Lugar Center is: country epidemiological and biological security; rapid detection of biological threats, confirmation and response; participation in Global Health Security

⁵ Decree of Government of Georgia N422, May 7, 2013

Agenda (GHSA) laboratory package; zoentomological surveillance; provision of lab support to public health state programs; development of bio-medical research potential.

The exclusive capacity of the Center is diagnostics of especially dangerous pathogens, exotic and rare infections; influenza virology and molecular surveillance; respiratory, diarrheal and enteroviruses surveillance; rotavirus surveillance, measles, rubella surveillance and genotyping; sequencing of full genomics; polio virology and molecular surveillance.

The Lugar Center is a first BSL-3 laboratory not only in Georgia but in the whole Caucasus and Central Asian Region. It has the capacity to detect such dangerous infections as follows: Ebola, CCHF, Dengue, Zika etc. The especially dangerous cultures are consolidated in one secure place, the so called national repository. The history of the repository starts from the 60's of the previous century after the "live-culture museum" of the Anti-Plague Station of Georgia was transferred two strains of cholera (*V. cholerae asiatica* (OGAWA)).

The Center includes the laboratories accredited by international organizations. They regularly participate in external assessment of professional competency. The 3 labs (Polio, Influenza and Measles / Rubella) are accredited by WHO; 5 labs (Rota viruses, Invasive Meningitis, Malaria, Salmonellosis and AMR) are connected to WHO / EQA network.

In 2015 the Lugar Center was awarded ISO 9901:2008 in management and in 2017 the Center was awarded ISO 15189 accreditation in serology and general bacteriology.



The biosafety BSL-2 zone includes the following labs: general bacteriology, virology, serology, molecular biology / genome, cell cultures, parasitology and entomology labs.



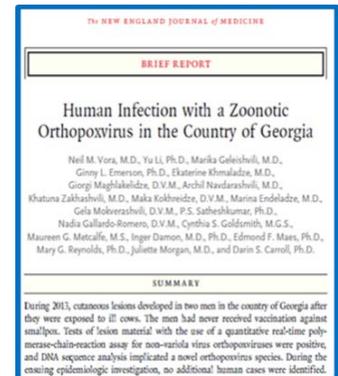
The Genomic Center is functioning in the Lugar Center, which has classic as well as next generation sequencing equipment (Miseq, Illumina) and all programmatic additional equipment that make the Center's capacity unique.

CLC-Bio, EDGE and other PC programs are available for analysis of sequenced results. The Center's staff regularly participate in local and international scientific projects; provide trainings and consultations to Georgian and Regional countries' universities in methodology of sequencing and genotyping.



On the basis of the Lugar Center the following scientific achievements were made for **the first time in the World**:

- new species of Orthopox virus discovered (so called Akhmeta virus);
- brucellosis and leptospirosis pathogens were found in bats;
- *Bartonella taylorii* was detected as a human pathogen in patients with HIV / AIDS; *Janibacter hoylei PVAS-1* was separated from an endocarditis clinical sample.



And **the first time in Georgia**:

- Cowpox detected in Samegrelo;
- The results of the suspected but unconfirmed samples 41% of Anthrax turned out to be caused by the viral infection of Parapox;
- Information on AMR was processed and published on the CAESAR network;
- Gram-negative bacteria was detected as highly resistant (ESBL);
- First time it was introduced bacterial isolates of carbapenem for monitoring;
- The mechanism of resistance was developed and resistant strains of *Neisseria gonorrhoeae*;
- Viral pneumonia cases, bacterial research / molecular method found to be positive for bacterial etiology in *Streptococcus pneumoniae*;
- Anthrax in soil active foci detection increased to 15% (10% historically). Correspondently, increased the risk of disease in animals, as well as in humans;
- Tularemia new foci was detected in Kvemo Kartli;
- *Cl. difficile* was isolated from clinical samples;
- *Leptospiriosis spp.* were identified in the country;
- *Escherichia coli* (STEC) toxical markers (stx1/stx2/eae/Ehly) were identified;
- *Salmonella spp.*, *Shigella spp* and inner toxins were identified producing *Escherichia coli* (STEC) of the genetic profiles of the pulsing field gel electrophoresis (PFGE), which is the source of an outbreak detection and identification;
- Sequencing of measles / rubella was introduced. Cases revealed measles genotype - D8;
- New serotypes of *Salmonella* and *Shigella* have been found;
- Through GARP (Genetic Algorithm for Rule-set Production) it became possible to forecast and ecologically model of vectors;
- GIS database started to be developed.

During the last 15 years, it is notable that through the support of U.S. donor organizations (CBR/DTRA, BTEP, CRDF, CDC, WRAIR) dozens of projects of public health and scientific importance were implemented on the basis of the Lugar Center. Some of them are very significant:

1. “Development of Surveillance System and Control Strategy for Leishmaniasis in Georgia by means of Epidemiological and Strengthening of Laboratory capacities”, BTEP ID # 89/ISTC # G-1081; 2005-2015;
2. Project - “Establishment of national sentinel-side, laboratory-based *Salmonella* surveillance system and outbreak response capacity for enhanced foodborne disease in the Republic of Georgia”, BTEP ID # 119/ISTC # G-1462., 2007-2015;
3. “Epidemiology and Ecology of Tularemia in Georgia “GG-19, DTRA .; 2013 –2016;
4. “Creation of Sustainable Immunodiagnostics”, GG-23 CBR/DTRA.; 2014 –2015;
5. “Human Disease Epidemiology and Surveillance of Especially Dangerous Pathogens in Georgia”, GG-21.; 2014 –2016;
6. Atypical *Y. pestis* strains isolated from Natural Foci in Georgia from Proteome to Virulence and Gene Expression“, TAP 6, DIRA. 2014 – 2015;
7. “Regional eco study of anthrax foci in Georgia and Azerbaijan“. GG 27, DTRA; 01/11/15- 31/10/17;
8. “Decoding the entire genome of strains located in Georgia by *Ralstonia solanacearum* of bacterial quarantine plant pathogen”. CRDF-Global; 05/03/2015 – 05/03/2017;
9. “Study of seroprevalence of zoonotic diseases in veterinarians, farmers and animals to compare Georgia and Jordan data”, CRDF-Global; 10/08/2015 - 31/05/2017;
10. “Enhancing capacity for case detection and diagnosis of febrile zoonotic-related cutaneous lesions in Georgia” (BAA). DTRA,, 2015-2018;
11. Cooperative agreement “Surveillance & Response to Avian & Pandemic Influenza by National Health Authorities outside the United States” (CDC), 2006-2011;
12. Cooperative Agreement “Sustaining Influenza Surveillance Networks and Response to Seasonal and Pandemic Influenza by National Health Authorities outside the United States” (CDC), 2011–2016;
13. Cooperative Agreement “Maintenance of Influenza Surveillance Capacity by National Health Authorities outside the United States”, (CDC) 2016 to present.

Since 2013 the CDC Global Disease Detection (GDD) Center has expanded collaboration with the NCDC through the projects serving for disease surveillance systems and outbreak response activities for respiratory diseases, enteric diseases, STIs, immunization etc. Later, the GDD projects also covered the sentinel-based study on nutrition status in pregnant women, children under age 5 and school-age (12y-13y) in 4 regions of Georgia.

In 2015 in the framework of the flagship program: Hepatitis C Elimination, and in collaboration with the U.S. CDC the first nationwide Hepatitis C and B epidemiological survey was conducted in Georgia with a primary objective to estimate the prevalence of HCV infection in the general population. The lab part (revealing positive antibodies, PCR diagnostics and genotyping) was conducted in the Lugar Center. According to the survey, active infection was detected in approximately 150 thousand people which became a baseline for strategic activities of the Program.

The Hepatitis C Elimination Program has been initiated by the Government of Georgia together with CDC and Gilead Sciences, USA. In this regard Georgia has become a model country in elimination of Hepatitis C worldwide which has been implementing successfully for 3 years already.

Currently, with regard to the purpose of monitoring, the Lugar Center is providing an external control to the laboratories engaged in HCV diagnostics and treatment.

In the development process of bio-medicine in Georgia, the U.S. Walter Reed Army Institute of Research (WRAIR) is another significant partner organization. The WRAIR aims to conduct biomedical research that is responsive to the Department of Defense and U.S. Army requirements and delivers lifesaving products including knowledge, technology and medical material.

WRAIR through the U.S. Army Medical Research Unit-Georgia (USAMRU-G) is operating at the Lugar Center. Since its establishment in 2011, USAMRU-G has been working closely with NCDC and other Georgian partner organizations. USAMRU-G has a research portfolio aimed at promoting global security, identifying infectious disease threats to global health security, and developing interventions to mitigate these threats.

WRAIR cooperates with NCDC / Lugar Center scientists to implement joint research.



The most notable joint projects are as follows:

1. Acute Febrile Illness and vector-borne disease which has a Crimean-Congo Hemorrhagic Fever component involving NCDC.
2. Antimicrobial Resistance (AMR) which involves collaborative training and sample collection from NCDC Zonal diagnostic laboratories.

It is planned to conduct future studies in:

1. Next generation sequencing: this project will involve collaboration with NCDC scientists to set-up the USAMRD-G sequencing capacity.

2. Molecular enterics - which will involve the analysis of cultures of Gram negative stool samples.

The following Georgian institutions and counterparts are using the Lugar Center laboratory capacity: BSL-3 space is co-shared by the Laboratory of the Ministry of Agriculture (LMA – Ministry of Environment Protection and Agriculture of Georgia) as well as by the Eliava Institute of Bacteriophage, Microbiology and Virology; the BSL-2 space is regularly co-shared by Georgian universities and the WRAIR.

In the 2014 bilateral agreement⁶ (Joint Transition Agreement) on the transition of sustainable costs and responsibilities over the unified laboratory system for detection, epidemiological surveillance and response to especially dangerous pathogens, and the Richard G. Lugar Center for Public Health Research in Georgia was signed by the PM of Georgia and U.S. Extraordinary and Plenipotentiary Ambassador to Georgia. Later the Agreement was ratified by the Parliament of Georgia. The JTA defined a number of obligations and actions between the two Governments for further cooperation.

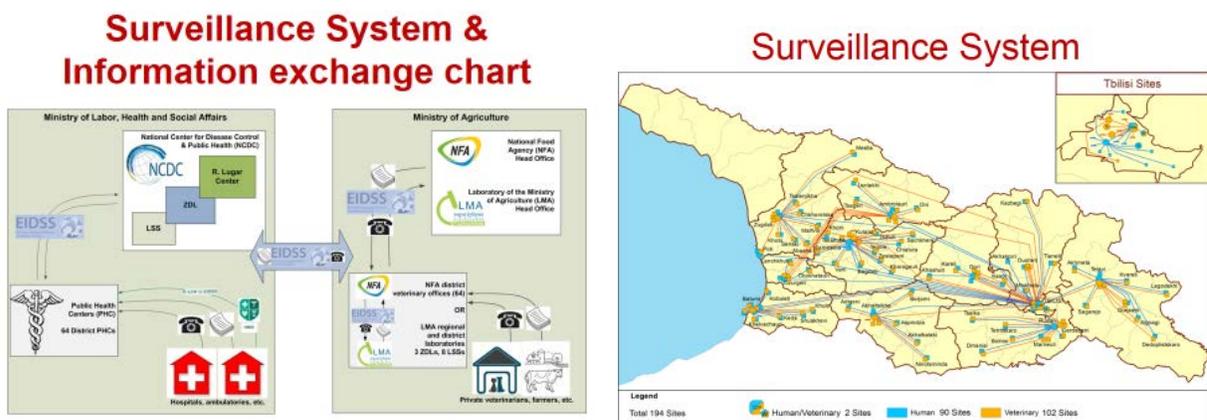


In 2014-2018 during the transition period the funding of maintenance costs of the unified laboratory network was transferred for fulfillment to the DTRA by the U.S. Government. In the framework of intensive coordination with DTRA, the Government of Georgia was able to provide stepwise funding of transition expenses and from the beginning of 2018 it took full responsibilities over the maintenance of the Unified Laboratory System and the R. Lugar Center.

6. <https://www.matsne.gov.ge/ka/document/view/2509263>

“The Lugar Center is an open facility for local as well as for international researchers, students, Diplomatic Corps and Public Media reps. A number of projects have been conducted in cooperation with American, German, Norwegian and other European scientists. The researchers from post-Soviet countries such as: the Russian Federation, Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan and Moldova have had an opportunity to visit the Center and to be engaged in the studies”.⁷

One of the most significant contributions from the U.S. Government is the investment in creation and development of the Electronic Integrated Disease Surveillance System (EIDSS) for CBEP involved Georgian entities. Since 2012 the EIDSS has been recognized and accepted by the Ministry of Labour, Health and Social Affairs of Georgia as a unique, official tool for surveillance and monitoring purposes. As of today 192 entry points are connected into the system, including 90 entries belong to human health services under the MoLHSA and the other 102 belong to entities of the Ministry of Environment Protection and Agriculture. Through the EIDSS it is able to monitor notifiable especially dangerous diseases in a real time that follows the requirements of International Health Regulations (IHR).



Along with development of laboratory and the epidemiologic network infrastructure the CBEP / DTRA also invested in development of human resources. Hundreds of Georgian specialists have passed the trainings through the local and international organizations: Black & Veatch, Battelle, CDC, Critigen, Curatio, Health Protection Agency UK, JUP, NG, NMRC, Northrop Grumman, PNNL, UFL, and USAMRID. The learning modules covered the following directions including: Biosafety and Biosecurity; Epidemiology, Entomology, Biostatistics, Lab Sample Collection, Grant Writing and Management, Financial Management, Laboratory Management etc. 80% of NCDC staff have passed the above-mentioned trainings.

⁷ <https://www.polygraph.info/a/is-a-secret-us-lab-in-georgia-spreading-deadly-pathogens/28825452.html>

In context of human resources development the U.S. CDC has also played a great role in providing Field Epidemiology and Laboratory Training Program (FELTP) to Georgian specialists. In 2009 the CDC / South Caucasus regional office was founded in the premises of the NCDC and based on FELTP - competency-based training and in-service program in applied epidemiology and public health for Georgia, the Republic of Armenia and the Republic of Azerbaijan. The aim of the Program was to strengthen public health capacity in human and animal disease surveillance, laboratory, outbreak response, and program evaluation through a combination of classroom and on-the-job training and service. Due to this program up to 100 specialists from human and animal health sectors of the South Caucasus Region have received specialized epidemiology and laboratory training.



Since the 90's of the previous century the NCDC has been collaborating with various U.S. leading universities: University of Maryland, University of Florida, Emory University, Johns Hopkins University, University of Virginia, Los Alamos National Laboratory and University of North Arizona. They have been providing partnership relations in the process of joint studies. The NCDC staff have passed long-term and short-term training courses in epidemiology, laboratory and biostatistics at those universities.

Since 2014-2015 the collaboration with American Institutions defined new priorities and directions in terms of the strengthening of public health and science. Georgia, namely the National Center for Disease Control and Public Health, became a leader for CBEP involved regional countries (Armenia, Azerbaijan, Kazakhstan, Ukraine and Moldova) in the sharing of epidemiologic and laboratory expertise in context of cross-border collaboration. The collaboration is being supported by DTRA and is known as the Bio-surveillance Network of Silk Road countries (BNSR Project).



The goal and objectives of the BNSR are intensive coordination for monitoring and prevention of infectious diseases on borders; implementation of joint scientific studies to solve Global Health Security Agenda objectives. It is also planned to nominate the NCDC as the Regional Hub for provision of Bio-safety and Bio-security; Laboratory Standards and Quality Control trainings to neighbor countries.

In 2014 Georgia, along with approximately 50 other countries, was involved in the United States Government's Initiative "Global Health Security Agenda (GHSA). The mandate of GHSA is to advance a world safe and secure from infectious disease threats, to bring together nations from all over the world to make new, definitive commitments, and to elevate global health security as a national leaders-level priority.

GHSA acknowledges the essential need for a multilateral and multi-sectoral approach to strengthen both the global capacity and nations' capacity to prevent, detect, and respond to infectious diseases threats and bioterrorism events.

Through a partnership of nearly 50 nations, international organizations, and non-governmental stakeholders, GHSA is facilitating collaborative, capacity-building efforts to achieve specific and measurable targets around biological threats, while accelerating achievement of the core capacities required by the World Health Organization's (WHO's), International Health Regulations (IHR), the World Organization of Animal Health's (OIE) Performance of Veterinary Services Pathway, and other relevant global health security frameworks. This partnership is led and supported by a GHSA Steering Group composed of 10 member nations. The Chair of this Steering Group is filled by a different nation each year.

In addition to individual countries, advisory partners include the WHO, the UN Food and Agriculture Organization (FAO) and the OIE, Interpol, the Economic Community of West African States (ECOWAS), the UN Office for Disaster Risk Reduction (UNIDSR), and the European Union. Global Health Security is a shared responsibility that cannot be achieved by a single sector of government. Its success depends upon collaboration among the health, security, environment and agriculture sectors.



GHSA includes 11 Action Packages which should be implemented by leading and contributing countries:

- Prevent 1: Antimicrobial Resistance
 - Prevent 2: Zoonotic Disease
 - Prevent 3: Biosafety and Biosecurity
 - Prevent 4: Immunization
 - Detect 1: National Laboratory System
 - Detect 2 & 3: Real-Time Surveillance
 - Detect 4: Reporting
 - Detect 5: Workforce Development
-
- Respond 1: Emergency Operations Centers
 - Respond 2: Linking Public Health with Law and Multisectoral Rapid Response
 - Respond 3: Medical Countermeasures and Personnel Deployment Action Package



Georgia was invited as a priority country to take part in all political and technical processes of the Initiative. Georgia is committed to three objectives that fall under the “Detect” and “Prevent” area of the GHS Agenda: “Real-Time Surveillance”, - as a Leading country together with Norway, “National Laboratory System” and “Zoonotic Diseases” – as a contributing country. In the framework of GHSA the NCDC is a key leading institution.

To achieve the GHSA objectives the Public Health Preparedness and Response Division was established at NCDC. Its functions and responsibilities are: interagency coordination during the Public Health emergencies; case analysis and risk assessment; elaboration of All-Hazard and Disease-specific Response Plans.

Due to the GHSA importance the DTRA supports the NCDC in all kind of activities that refer to Public Health and the fight against Biological Threats. In March 2018, under the auspices of GHSA, for the first time the NCDC hosted a very important international conference “Accelerating progress in the Real-Time Bio-surveillance Action Package of GHSA” which was highly supported by DTRA. DTRA also expresses its readiness to assist the NCDC in establishment and equipment of the Emergency Operation Center (EOC).

Currently, through the U.S. support, development of information technologies and introduction of new electronic modules for better data processing is in process. DTRA supports the development of the Laboratory Information Management System (LIMS) for the unified laboratory network which will be a comprehensive tool for connected Georgian entities. Also, the DTRA is planning to develop a new and flexible version of EIDSS for epidemiologic, public health and veterinary services of Georgia.

In 2016 under the initiative of the Ministry of Labour, Health and Social Affairs of Georgia, the National Center for Disease Control and Public Health (NCDC) together with the U.S. Defense Threat Reduction Agency (DTRA) coordinated the negotiations and established the partnership relationship with the British Medical Journal (BMJ) strategic partnership team who decided to support Georgian physicians with a BMJ e-learning platform.

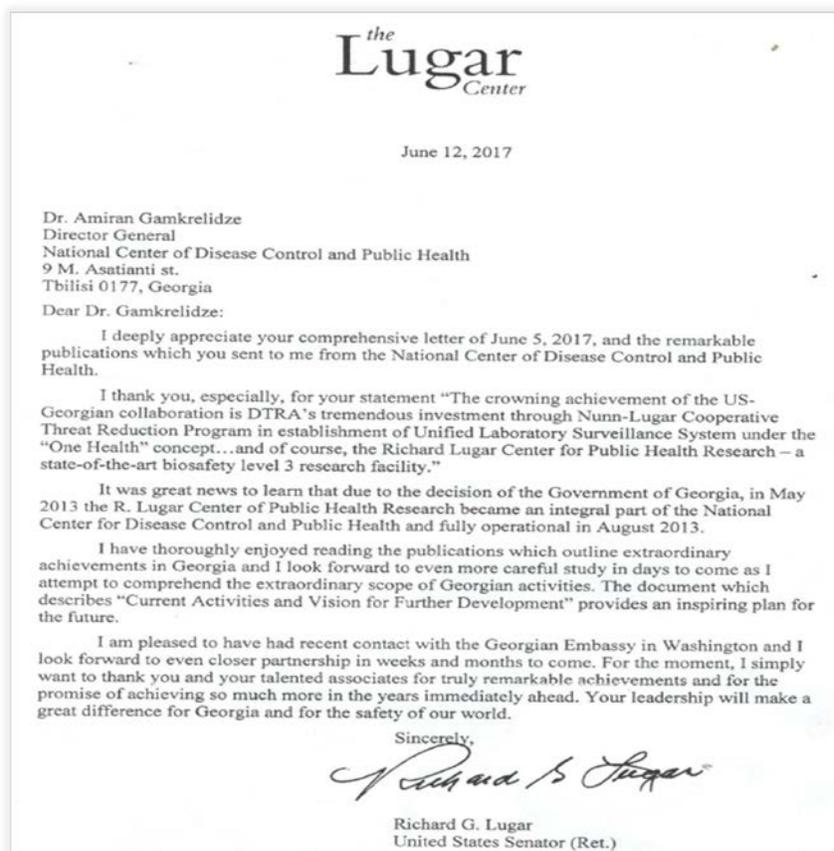
The partnership with the BMJ is shaped as a 4 year project in the framework of the contract signed between DTRA and the BMJ according to which the BMJ is in charge of provide all leading sources to Georgian healthcare professionals. As of today up to 1,500 medical doctors are registered at the BMJ portal and 55 clinics throughout the country are connected to the platform.

Under the DTRA’s assistance aGeorgian BMJ portal has also been established where 40% of all resources were translated into Georgian and offered to doctors.



Nowadays, due to all of the above-described achievements, Georgia is a lead country in the Region with its strong laboratory and epidemiological capacity; Bio-safety & Bio-security standards; with diagnostic and reporting systems; with academic and scientific research potential.

In 2017 the Director General of NCDC received a letter of appreciation from the United States Senator (Ret.) - Richard G. Lugar in which the Senator expressed his delight for all the successful results the NCDC / Lugar Center had achieved in the framework of its activities.



Since 2018 the collaboration with U.S. partners has expanded further on country and regional inter-sectoral levels that will define new goals and objectives.

The following activities are planned that are in compliance with strategic priorities of the National Center for Disease Control and Public Health:

- It is planned to establish an inter-sectoral Board of Governors between the Georgian and U.S. Government agencies which will strengthen partnership relations between the countries and will act for the Georgian agencies' needs and priorities (DTRA / CBEP);
- The U.S. partners will continue to promote further development of the Lugar Center's capacity (DTRA, CDC, WRAIR); to support international accreditation, establishment of a Regional Hub for Bio-safety and Bio-security trainings, creation of innovative products by using applied bio-medical projects; further development of Human Genomics; Science Diplomacy (DTRA / CBEP, CDC, WRAIR);
- It is planned to support the establishment and equipment of an Emergency Operation Center (EOC) (DTRA / CDC);
- To support refresher trainings for regional laboratory and public health specialists; to provide a front-line field epidemiology training program to public health centers' personnel (CBEP / DTRA);
- Within the development of electronic information technologies to develop comprehensive systems of EIDSS and LIMS (DTRA / CBEP);
- To expand cross-border collaboration under "One Health" Principles (DTRA / CBEP);
- To support the sustainability plan of the BMJ platform in Georgia.









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