



## Medical Statistics

National Center for Disease Control and Public Health plays the leading role in the field of health information in Georgia. The Department of Medical Statistics is a part of the NCDC since 2003. Main functions of the Department are: data collection from the medical facilities, data management (control, classification, validation), ensure databases management, data analyses and data presentation through publications and a variety of materials.

### Key Findings

Development of the health information systems (HIS) in the country is based on the principals of the modern healthcare practice, supported by electronic processes and communication (eHealth). Following these principles, in



2014, a new case-based **electronic hospital discharge reporting system** was developed. Implementation of the system, enables a deeper data analysis and presentation, creating a basis for evidence-based decisions. Content of the records allows distribution of data by geographic location, diagnosis, hospitalization outcome, conducted surgeries and procedures, and personalized features (sex, age, education, etc.). Statisticians from all countrywide in-patient health institutions have been trained by the Medical Statistics Department staff.

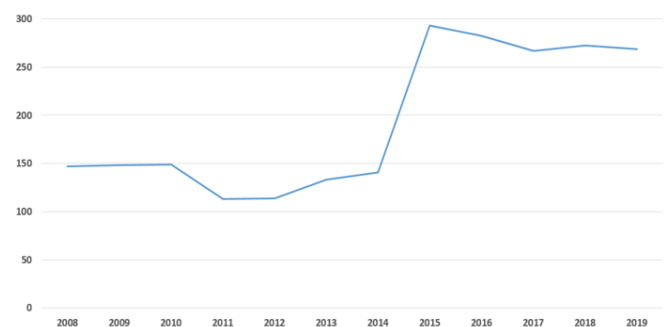
In 2016, a similar case-based **electronic reporting system for primary health care** institutions was implemented throughout the country. The system also created a basis for a detailed data analysis (by gender, age, diagnosis, geographical location, etc.). Statisticians from all outpatient health institutions were trained by Medical Statistics Department staff.

Since 2019 transfer from paper-based to **full electronic reporting** have been introduced.

Georgian HIS is shifting from one rooted in regular data collection to one that focuses on better managing chronic disease conditions and improving registration of the overall health status of the population. Helping to fuel this transition is the emergence of new models of data collection - **registries**.

In 2015, **Population-based Cancer Registry**, which is an organized system for collecting, storing, analyzing, interpreting and presenting the cancer data, was implemented. The Registry plays a significant role in terms of gathering qualitative data of cancer incidence and prevalence. Using this type of registry is important for cancer control programs assessment, for the defining and planning priority interventions, for cancer screening and for proper implementation other preventive measures, as well as for evaluation of the service effectiveness to determine the oncological patients' medical care dynamic observation.

Malignant Neoplasms, Incidence Rate per 100000 Population, Georgia

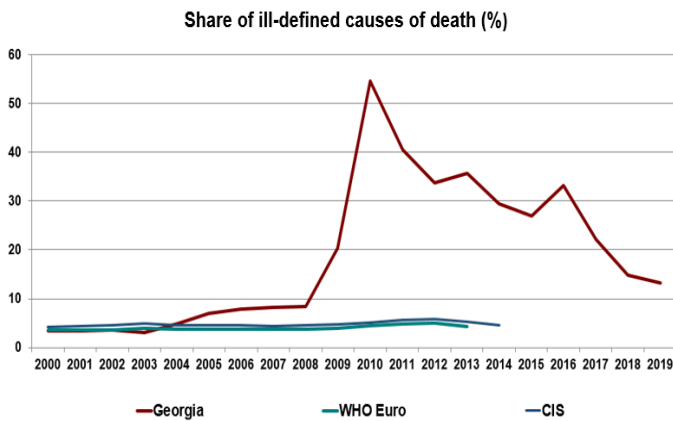


After the introduction of Cancer registry, the registered incidence of malignant neoplasms almost doubled. From 2019, Cancer Registry, which used CanReg5 freeware, was exchanged with Unify Oncological System, which includes Screening part, Cancer Registry and Lab testing unit.

Since Georgia introduced electronic data collection of births and deaths, coverage of the birth and death registration reached more than 95% in recent years. In 2017, **Vital Statistics (birth and death electronic system)** was transferred under the NCDC supervision. After migration of the birth and death registration electronic modules to the NCDC,

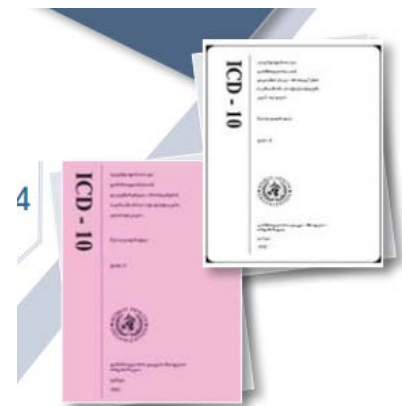
further measures to improve the data quality are taken. Although the share of **ill-defined causes of death** remains a serious problem. A decision to implement additional efforts to determine the underline cause of death was made to improve the situation. In 2017, capacity building process of improvement of identification of causes of death using Verbal Autopsy and other quality measures were continued. The district public health centers (63 PHC) are involved in the implementation of verbal autopsy and medical records revision. All involved staff was provided with trainings and appropriate instructions and materials. As a result, the share of ill-defined causes significantly reduced. Besides

verbal autopsy alternative databases from various registries are also used for identifying ill-defined causes of death and the result of these effective measures taken, ill-defined causes of death has been significantly reduced and it ranges 13-14% from 2018. Existing achievement will be maintained also in upcoming years.



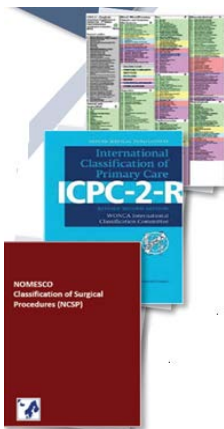
Introduction of electronic system for antenatal and obstetric services, so called “**Georgian Birth Registry**”, which provides continuous monitoring of pregnant women from the first antenatal visit up until childbirth in 2016, was an important step forward. The system also registers data about the newborn’s health at birth. A new analytics page has been added to the Birth Registry, which contains up to 400 indicators that are automatically generated based on the data entered into the system. In 2019, NCDC carried out so-called “data quality audit” for a birth registry data quality assessment which was aimed to compare paper based medical record with the birth registry data. In 2020, existing process was completed and preliminary analysis showed a high validity of birth registry data. Appropriateness of chosen variables from both sources is high than 90%.

A rapid development of the health information system in the country was supported by the World Health Organization, which plays an important role in this process. An important milestone of the collaboration was the implementation of the 10th Revision of the **International Statistical Classification of Diseases and Related Health Problems** throughout the whole country. A lot of cascade trainings for different target groups have been conducted to study the morbidity and mortality registration. The trainers’ potential has been developed at regional level. In addition, all materials are translated into Georgian language. The Department of Medical Statistics translates published volumes of ICD-10 with updates and lists of changes.



Georgia was the first country in the European region, having translated the World Health Organization’s **Web-based interactive training package** for coding morbidity and mortality. In 2011-2012, it was translated into Georgian language by the Department of Medical Statistics and was uploaded on the Center’s web-site:

[http://apps.who.int/classifications/apps/icd/icd10training/.](http://apps.who.int/classifications/apps/icd/icd10training/)



Implementation of the unique **classifications of health interventions** and services was an important step for reinforcing the data standardization in Georgia. Classifications of outpatient and in-patient interventions, suitable for Georgia, have been chosen for adequately managing and registration of a great volume of data: NOMESCO Classification of Surgical Procedures (NCSP) for in-patient, and the International Classification of Primary Care (ICPC) for outpatient care. The classifications have been implemented since 2011. Classifications are available on-line:

<http://classifications.moh.gov.ge/Classifications/Pages/ViewICD10.aspx>.

In 2013, a capacity building process in ICD10 implementation started. Trainings of trainers (ToT) and following trainings of Public health (PH) specialists in proper use of ICD10 were conducted countrywide.



**Data popularization and presentation** are among main goals of the Department of Medical Statistics. In 1996, the first statistical yearbook “Health Care in Georgia” was published. Since that time, this has been the annual publication. The statistical yearbook “Health Care in Georgia” represents the edition comprising the basic statistical indicators related to public health and health care resources of the country. The indicators provided by the yearbooks are calculated using the WHO recommended methodologies. The latter makes possible

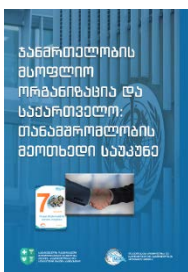
to compare the respective data from Georgia to the data from other parts of the world. Since 2012, an edition named “Highlights of health care” has been published annually. The edition is a shorter version of the statistical yearbook is prepared faster and published earlier than the main publication. Other statistical reviews are preparing periodically, e.g., “Cancer in

Georgia”, “Key indicators of population health status and medical services in the regions of Georgia”, “Brief statistics on the health care of children aged 0-15”, “Blood safety”, etc.

Since 2008, all statistical publications are available on-line: <http://ncdc.ge/en-US/Statistics/DiseaseStatistics>.

## Recent Key Achievements

Collaboration with the WHO continues to be the most fruitful and beneficial for the country. In 2017, “**Georgia, Profile of health and well-being**” and shorter version “**Georgia, Highlights on health and well-being**” were developed in collaboration with the WHO Regional Office for Europe. These publications give an overview of a country’s health status, describing data on mortality, morbidity and exposure to key risk factors along with trends over time. Georgia was one of the first among the Member States to develop these publications. The data in the report are drawn from the European Health for All database of the WHO Regional Office for Europe.



The publication “**World Health Organization and Georgia: A quarter of century of collaboration**” has been prepared in 2018. The most important, key issues of the history of collaboration are shown in the publication. <https://www.ncdc.ge/Handlers/GetFile.ashx?ID=54cab5be-8655-4902-b0f2-7a323426852d>

**International collaboration** is essential for getting good statistics. Institute for Health Metrics and Evaluation (IHME) is a global research center at the University of Washington that provides independent, rigorous, and comparable measurement of the world's most important health problems and evaluates the strategies used to address them. IHME and the NCDC aim at improving estimates of the burden of diseases, injuries, and risk factors for Georgia, using methods consistent to the overall Global Burden of Disease Study (GBD), administered by IHME. For this to happen, the two institutions collaborate to share data, knowledge, and expertise. The collaboration produces estimates on the burden of diseases, injuries, and risk factors at the national and sub-national level. In connection with the COVID-19 pandemic, Georgia joined the "COVID-19 Projections Tool", which creates a visualization of a mathematical model of pandemic based on the data of Georgia. During 2015-2020, 11 articles were published in the Lancet with the NCDC medical statistics staff co-authorship.

THE LANCET



Global Burden of Disease report by

THE LANCET



3 articles were published in the „European Journal of Public Health“ with the NCDC medical statistics staff co-authorship.



Georgia is a member of the **European Health Information Initiative (EHII)**, which is a WHO network committed to improving the information that underpins health policies. It fosters international cooperation to support the exchange of expertise, build capacity and harmonize processes in data collection and reporting. The NCDC staff actively participates in conduction of regular steering committees.

## Challenges

- Future development of the Health Information System (HIS) includes:
- Development and implementation of new registries.
  - Implementation of a new system for supervision of under-5 children.
  - Regular updating of implemented medical classifications.
  - Introducing of modern analytical tools and data presentation methods.
  - Data Quality improvement.
  - Strengthening Human Resources.
  - Continuous education of the involved health personnel.



For further development of the HIS all types of assistance (financial, technical, and methodological) is needed. To conduct surveys is recommended for effective monitoring and quality evaluation of the implemented modules and registries. A participation of international experts is necessary to implement a standard technology, data collection tools, and for representative sampling. Results of such surveys will give internationally recognized estimates of incidence and prevalence of diseases, specific groups of mortality (maternal, child, neonatal, etc.), and real distribution of causes of death (mortality structure).



MINISTRY OF INTERNALLY DISPLACED PERSONS FROM THE OCCUPIED TERRITORIES, LABOUR, HEALTH AND SOCIAL AFFAIRS OF GEORGIA

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