

IDFI

Institute for Development
of Freedom of Information



Quality and Availability of Demographic and Healthcare Data in Eastern Europe and Central Asia

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Introduction

Public health work, research, and primary healthcare provision draw substantially upon data that should be reliable, accessible, and trusted. In the COVID-19 pandemic, governance and reusability of data in the health sector have been recognized as essential. The combination of respect for individual privacy rights and the focus on population and patient health is critical to ensure coordinated action. Data can support access to healthcare across the diverse systems of the world. Health data is essential for achieving goal 3 of the Sustainable Development Goals: “Ensure healthy lives and promote well-being for all ages.” Additionally, disaggregation of health data is crucial in understanding and addressing inequalities in health outcomes. By breaking down data by factors such as gender, race, socioeconomic status, and location, we can better understand and target the specific needs and challenges faced by different populations. This is particularly important in achieving SDG goal 10, which aims to reduce inequalities within and among countries. Disaggregated data can inform policy and program decisions to address these disparities and ensure that health services are reaching and benefiting all members of society, regardless of their background.

Traditionally, population statistics are compiled through civil registration and vital statistics (CRVS) systems, censuses, and other surveys of individuals and households. In most countries, a population and housing census is conducted every ten years; in others, at irregular intervals of time. The census is also used to produce social statistics, but household surveys are usually a key data source for these statistics in many countries. However, releasing data and statistics from censuses and surveys often suffers from a substantial lag, affecting the need for timely evidence required by policymaking. In addition, crises such as the COVID-19 pandemic, require real-time data, particularly on the population’s location, density, and movements, while preserving personal data privacy and protection.

CRVS systems have become increasingly recognized as catalytic for monitoring population dynamics spanning the entire life course. Population scientists have a long history of contributing to strengthening CRVS systems and using vital registration data. The data provided by CRVS systems contains the information needed to understand population and development dynamics to achieve SDG 3 by tracking the progress on mortality, providing data to improve vaccines, and strengthening the capacity to manage national and global health risks, ensuring an equal distribution of healthcare resources. In addition, healthcare system capacity data supports governments and other actors — a crucial goal amid a worldwide public health crisis.

Utilizing detailed civil registration and vital statistics (CRVS) data can aid in pinpointing specific population groups that may necessitate targeted service provision. For instance, the COVID-19 pandemic revealed a disproportionate impact on older individuals. By dissecting age disaggregated CRVS data, decision-makers and service providers could identify older adults as a demographic that may require additional support and resources. This can encompass enhanced access to healthcare, social services, and other forms of aid to alleviate the pandemic’s effect on this susceptible population. Similarly, other forms of disaggregation can be used to identify various other groups and their specific needs.

A thorough study of data ecosystems is essential to fully grasp the landscape of countries and pinpoint areas in need of improvement. One such study is the Global Data Barometer (GDB), a worldwide endeavor that evaluated the state of data for the public good in 109 nations. The study, conducted by experts from May 2019 to May 2021, established a new global standard for analyzing data governance, capability, availability, and use, as well as its impact on the public good. The Barometer’s examination covers various fields, including demographic, healthcare, and Covid-19-related data, providing a robust foundation for identifying major global trends and good practices.

GDB is a multi-stakeholder initiative, and it works with Regional Hubs, thematic partners, governments, private sector and civil society organizations, academia, and the media, to fill data gaps, generate insights, and support debate about our data futures. It produced a benchmark study based on a common methodology to support cross-country comparison and learning regarding laws and policies, data availability, data capabilities, and data use across various settings. Therefore, it provided rich primary data to fuel sector and issue-specific data-related initiatives.

The Institute for Development of Freedom of Information (IDFI) is a Regional Hub for the Global Data Barometer (GDB) project for Eastern Europe and Central Asia and is responsible for coordinating data collection process in Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, the Republic of Moldova, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. The engagement of IDFI and national researchers from Eastern Europe and Central Asia in the Global Data Barometer project has been supported by the United Nations Population Fund (UNFPA) Regional Office for EECA.

IDFI has prepared a regional analysis of GDB results¹, which was later included in the global report of GDB. The analysis overviewed general trends and tendencies based on the regional and country results. However, the prepared analysis covered the healthcare & Covid-19 module very broadly, only overviewing the main gaps and achievements by emphasizing the fact that vaccination data and general statistics are available in almost every country of the region, although access to machine-readable and open formats is a significant challenge. The data gathered by GDB allows for a more in-depth analysis of population and healthcare data.

Therefore, this report aims to provide a comprehensive analysis of Eastern European and Central Asian countries (11 countries in total) based on GDB results in the mentioned module. An in-depth analysis of the module enables us to show significant tendencies, best practices, and primary needs not only in the region but also for particular countries.

¹ [Global Data Barometer Results - Overview of Georgia, Eastern Europe, and Central Asia](#)



Methodology

In the frame of the project, IDFI analyzed the raw data obtained by GDB² in the countries of Eastern Europe and Central Asia region. The assessment covers the period from May 2019 – May 2021.³ The analysis is focused on the Health and Covid-19 module of GDB, which includes country assessments regarding accessibility of important population/demographic data. In particular, the module consists of the following sub-modules/categories:

- ➔ Vital statistics (primary indicator);
- ➔ Healthcare system capacity data (secondary source);
- ➔ Real-time healthcare system capacity data (primary indicator);
- ➔ COVID-19 statistics, which includes Vaccination data (primary indicator); Testing data (secondary source); Infection and mortality data (secondary source).

To give more details about the topics/data types, accessibility of which could be analyzed as a result of the study, below we provide the list of indicators and the type of information considered under GDB and the mentioned module:

I. Civil registration and vital statistics (CRVS) information

This indicator assesses whether or not the data is available on the following topics and what degree of the specification is provided:

- 👤 The cause of death is standardized by the International Classification of Causes of Death (ICD) or a related, fully interoperable standard.
- 👤 Mortality information includes data about age, sex and/or gender, geographic location, and cause of death.
- 👤 Birth information includes data about sex and/or assigned gender of the child, gestational age, and birth weight, live-birth order and interval between last and previous live births to mother, place of occurrence, place of usual residence of mother, and month of occurrence, place of registration and month of registration, age, educational attainment, and ethnic and/or national group of mother, age of father and place of usual residence, site of delivery, attendant at birth, and month in which prenatal care began.

II. The real-time capacity of the healthcare system

This indicator assesses whether or not data is available in real-time on the capacity of the healthcare system and if the data includes:









- ⊕ Information at the level of facilities,
- ⊕ The number and availability of regular beds and ICU beds;
- ⊕ The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders);
- ⊕ The number, type, and availability of COVID-19 tests;
- ⊕ The number, type, and availability of COVID-19 vaccines.

² [GDB-Raw Open Data](#)



³ Due to the specific time period, some links indicated as sources may be malfunctioning, altered or temporarily unavailable

III. Vaccination Data

Assesses the availability of vaccination data and whether or not it includes:

-  Specific details on vaccine supply and administration, such as the number of doses in possession and of what type, number of doses administered (this may be broken into partial and complete vaccination), and per cent of total doses administered;
-  geographic distribution of vaccinations;
-  Information about the age of the people who have been vaccinated;
-  Information about the sex and/or gender of the people who have been vaccinated;
-  Information about the disability status of the people who have been vaccinated;
-  Information about membership in a marginalized population among the people who have been vaccinated;
-  Information about vaccination for residents of long-term care facilities;
-  Information about vaccination for residents of prisons and jails.

Secondary Indicators:

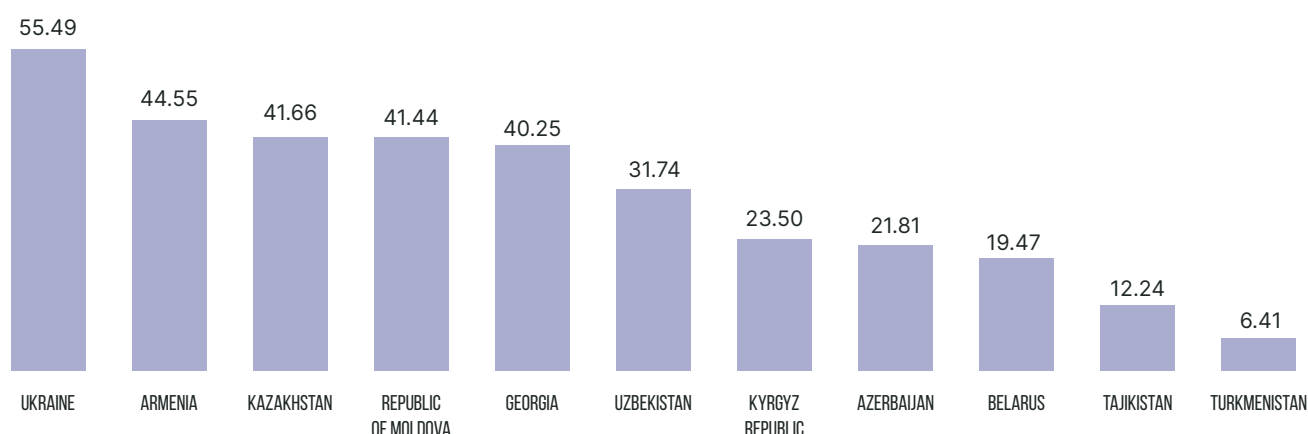
-  Availability: Testing data (COVID-19): Our World in Data - <https://ourworldindata.org/coronavirus-testing>
-  Availability: Healthcare system capacity: ODIN- <https://odin.opendatawatch.com/>



Major Takeaways from the Global Data Barometer

In Eastern Europe and the Central Asian region, the highest scores were attributed to Ukraine. The diagram below shows the average score obtained for all GDB indicators and modules on a 100-point scale. In this regard, Ukraine, Armenia, Kazakhstan, Moldova and Georgia are the highest-scoring countries of the region in respective order. In comparison, the lowest scores were observed in Turkmenistan and Tajikistan. Although, it is worth noting that the GDB does not prioritize ranking results; instead, it is more focused on contextual and in-depth analysis of existing data ecosystems.

Overall Total Scores



In addition to the survey, general assessment of the situation surrounding marginalized groups was made in the scope of the GDB. Ethnic minorities are found in most Eastern Europe and Central Asia countries, such as the Uzbek population in Tajikistan, ethnic Armenians and Azerbaijanis in Georgia, various groups in Azerbaijan, and so on. In addition, IDPs were a common denominator in conflict-affected regions such as Georgia and Ukraine.

In broader terms, several researchers identified the following groups as marginalized in their respective countries: women, the LGBTQ + community, persons with disabilities, the elderly, and rural populations. One interesting trend that was uncovered had to do with the official recognition of marginalized / vulnerable groups by the state. All of the examined countries, with the exception of Belarus⁴, explicitly guarantee equal rights and protections based on factors such as sex/gender, race/ethnicity, nationality, religion, language, political views, social status, and proprietary status in their Constitutions. In addition, Ukraine, Georgia, Turkmenistan, and Uzbekistan also provide grounds for protection based on residence. Kyrgyz Republic and Armenia are the only two countries that specifically mention protection against discrimination based on disability status and age. Kazakhstan and Azerbaijan's constitutions also include guarantees against discrimination based on occupation. It is worth noting that none of the examined constitutions explicitly provide protections for sexual minorities.

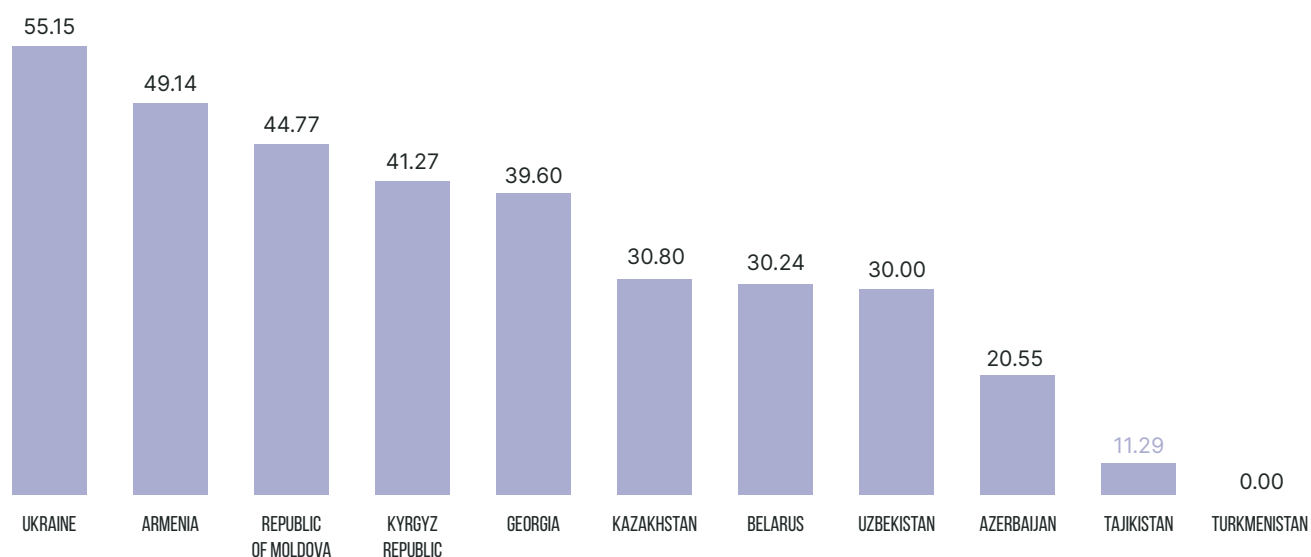
⁴ The constitution of Belarus only provides general provisions and has no mention of specific groups or grounds for protection other than religion and social status.

	SEX/ GENDER	RACE/ ETHNICITY	NATIONALITY	RELIGION	LANGUAGE	POLITICAL CONVICTION	SOCIAL STATUS	RESI- DENCE	PROPRIETARY STATUS	DISABILITY STATUS	AGE	OCCUPA- TION
KAZAKHSTAN	x	x	x	x	x	x	x	x	x			x
TAJIKISTAN	x	x	x	x	x	x	x		x			
KYRGYZ REPUBLIC	x	x	x	x	x	x			x	x	x	
UZBEKISTAN	x	x	x	x	x	x	x					
TURKMENISTAN	x	x	x	x	x	x	x	x	x			
AZERBAIJAN	x	x	x	x	x	x	x		x			x
ARMENIA	x	x	x	x	x	x	x		x	x	x	
GEORGIA	x	x	x	x	x	x	x	x	x			
UKRAINE	x	x	x	x	x	x	x	x	x			
REPUBLIC OF MOLDOVA	x	x	x	x	x	x	x		x			
BELARUS				x			x					

Major tendencies and findings in the region regarding the accessibility of population and healthcare data

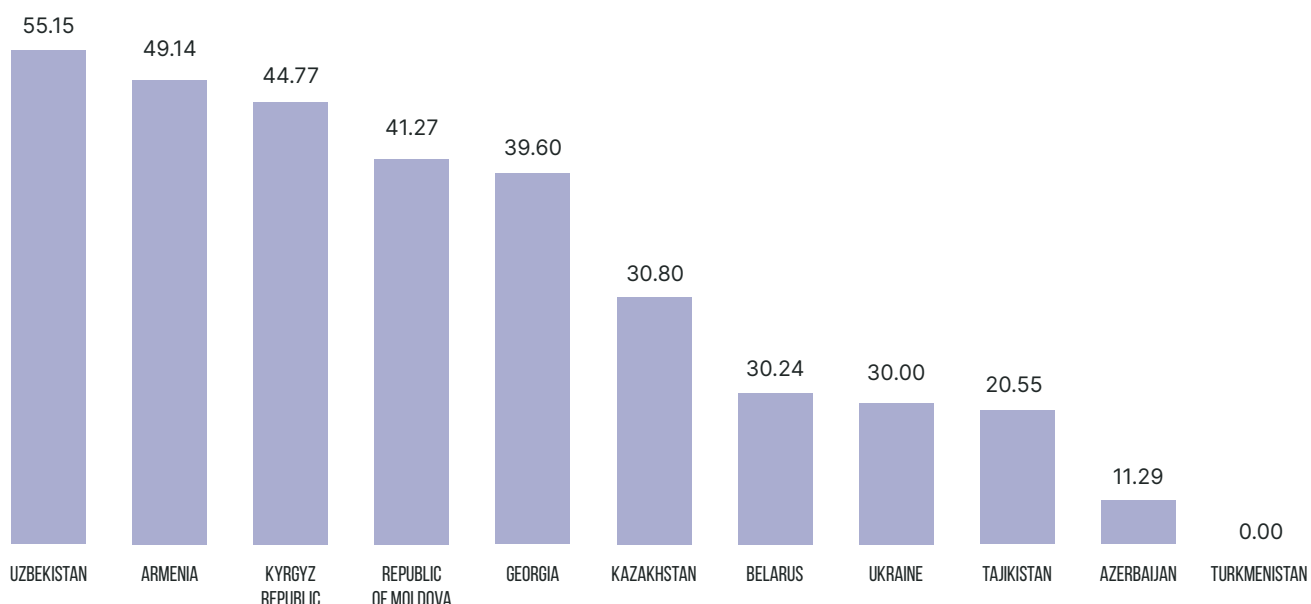
The Health and Covid-19 module consists of three components: i. Availability and Quality of CRVS Data, ii. The Real-time Capacity of the Healthcare System, and iii. Availability and Quality of Covid-19 Vaccination Statistics. The results in this module are more or less consistent with the overall scores of individual countries, with some outliers, such as Belarus and the Kyrgyz Republic, performing better than expected and Kazakhstan somewhat lagging behind.

Overall Scores in the Health and Covid 19 Module



CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

In most of the countries of Eastern Europe and Central Asia region, demographic data was available in some form on the portal of the National Statistical Office (NSO). However, the use of the ICD 10 standard to represent mortality data was still very sporadic and birth statistics were mostly offered in heavily aggregated forms (mostly by region). Several important indicators, such as the location of mother's registration, the time interval between births, gestation period, newborn weight, mother's education level, father's age, and others, were missing in all of the countries researched.



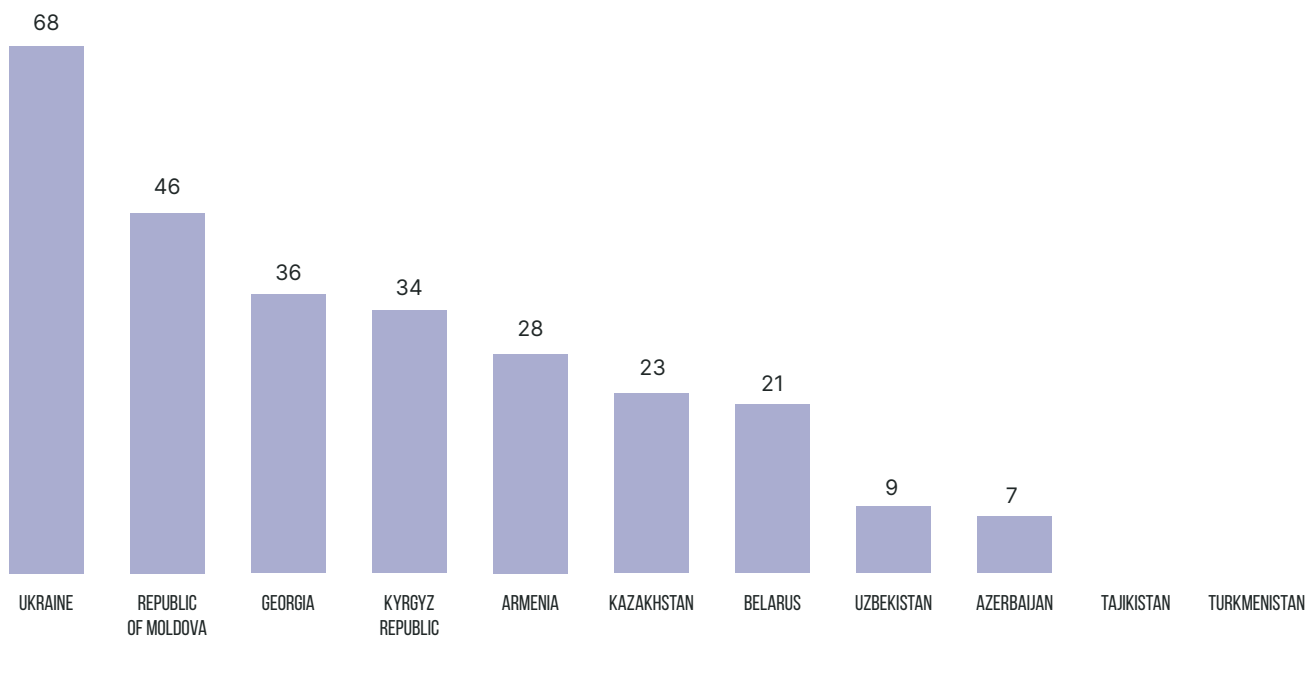
THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

Due to the complexity of the network required to generate and maintain an effective ecosystem of data on the healthcare system's capacity in the real time, there was a significant lack of successful examples in the 11 countries of the region. Only Ukraine, Armenia and the Kyrgyz Republic have meaningful activities in this regard, but even these systems were severely limited in scope and openness.



VACCINATION DATA

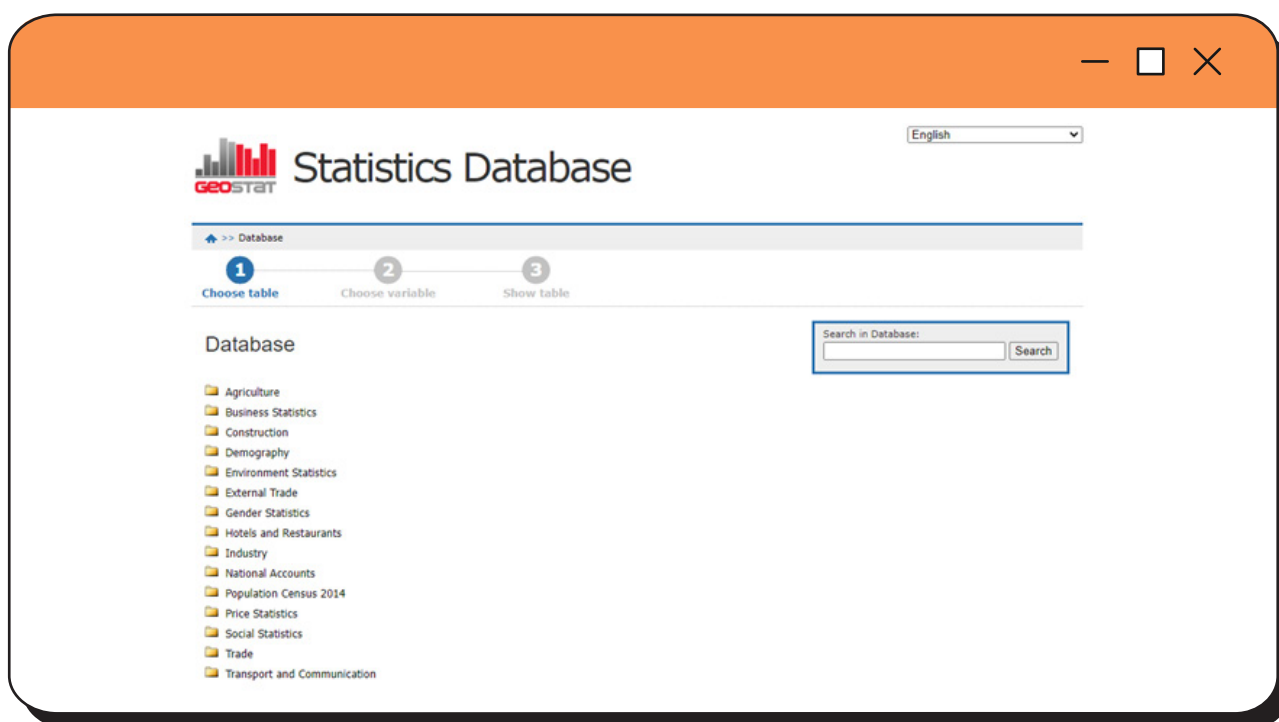
As a major observed trend, the information about the vaccination process was usually posted on the specialized statistics sections of the Ministries of Health, National Centers for Disease Control, NSOs or other dedicated Covid-19 portals. As a result, vaccination data and general statistics were available in almost every country in the region, although access to machine-readable and open formats was a significant challenge. Ukraine has shown the best results in this regard, followed by the Republic of Moldova and Georgia.





Compilation of Best Practices from the
Countries regarding the Accessibility of
Population and Healthcare Data

Several countries evaluated in the region were using PXWEB-based databases to make their CRVS data accessible. PXWEB is an API structure developed by Statistics Sweden and other national statistical institutions (NSI) to disseminate public statistics in a structured way. This API enables downloading and using data from statistical agencies without using a web browser directly over HTTP/HTTPS. Along with increased accessibility, this method allows users to easily view and explore the data online. In terms of the variety multiplicity of datasets, the Republic of Moldova and Armenia stood out with the availability of data, such as gestational age, live-birth order, and age of the mother at the time of birth, which is a rarity in the region. In terms of collecting and disclosing mortality data, several assessed countries such as Georgia and Kazakhstan have shown evidence of using the ICD-10 standards.⁵ Moreover, there is already evidence⁶ of some countries beginning to implement ICD 11 standards which was released by WHO in January 2022, however these cases remain sporadic and full adoption is unlikely in the near future for the regions, considering the fact that only a handful of countries have implemented the previous version.



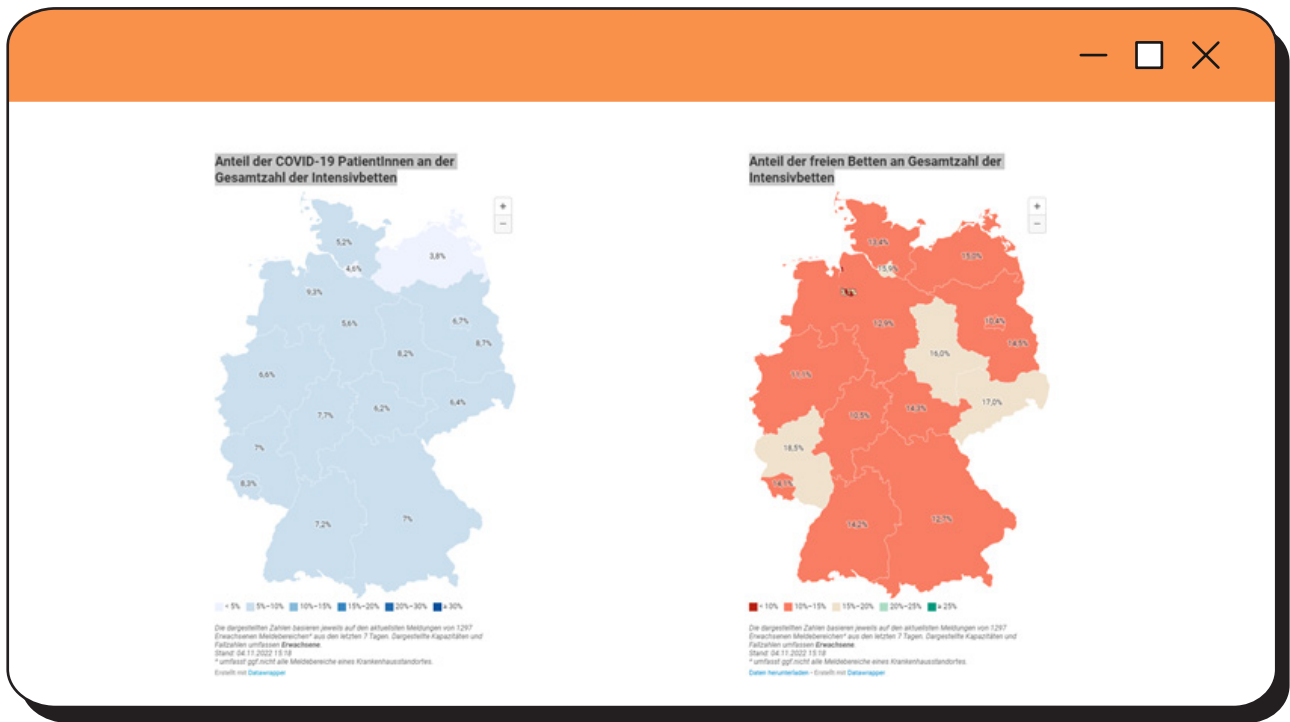
Georgia's Statistics Database

As for the real-time data on the capacity of the healthcare system, Ukraine took steps to make this data available in real-time during the COVID pandemic. Despite its limitations, these actions facilitated the management of the situation. There was also evidence of a real-time system being operational in Armenia, although the access was limited to government institutions and other specific organizations (private healthcare, insurance, etc.). Even looking at the broader GDB results, successful instances of such systems were limited to wealthier nations such as Germany, with its Intensive Care Unit Database⁷, available on a special portal, which provides detailed information on intensive care unit occupancy rates within the country. The data was broken down by regions, individual medical facilities, degree of intensity of care, and time of last data update (updated daily). The portal also provided an option to download the data in bulk in machine-readable format (CSV).

⁵ International Classification of Diseases, Tenth Revision (ICD-10) - The International Classification of Diseases (ICD) is designed to promote international comparability in the collection, processing, classification, and presentation of mortality statistics.

⁶ [WHO Training on ICD-11 for North and Central Asian countries](#)

⁷ [DIVI intensive care register](#)



DIVI Intensive Care Unit Database

Ukraine was the only country that made raw vaccination data accessible on its open data portal.⁸ The dataset included individual records and the following data points: immunization id, vaccine code, immunization date, patient age group, patient gender, manufacturer of the vaccine, lot number, expiration date, dosage/quantity, dose sequence, and date of insertion in the database. Georgia also stood out with one detail among other countries in the region, specifically, the availability of data about vaccination of incarcerated individuals.

The screenshot displays the "Information on vaccination of the population against the Corona virus disease" page on the Ukraine's Open Data Portal. The page features a navigation bar with "Datasets", "Administrators", "Analytics", "Questions and answers", and "Action, Open Data".

The main content area is titled "Information about the created electronic medical records about the vaccination of the population against the Corona virus disease". Under "Data and resources", there are two downloadable datasets:

- immunization_covid19_1qtr_2022.zip**: Information about the records created about vaccination of the population against the Corona virus...
- immunization_covid19_4qtr_2021.zip**: Information about the records created about vaccination of the population against the Corona virus...

On the right side, there is a summary for the dataset, including a "Rating" of 0 and "Subscribers" of 5. The manager is identified as "Natsionalna sluzhba-zdorovia-ukrainy" (National Health Service of Ukraine).

Ukraine's Open Data Portal-Vaccination Data

⁸ Ukraine's Open Data Portal-Vaccination data



Major Gaps and Needs in terms of
Accessibility of Population and
Healthcare Data

CRVS data was collected in some form in every assessed country of the region, although the data standards used vastly differed across the board. Most countries did not use the ICD standards or equivalent systems for collecting and disclosing mortality data, despite most assessed examples having some degree of breakdown by disease types.

Disaggregation of CRVS data was also a major issue in many countries. For instance, mortality data was comprehensively broken down by age, sex, geographic location, and cause of death in only two examples (Armenia and Azerbaijan).

Birth data also lacked disaggregation by gestational age, birth weight, live-birth order, the interval between last, mother's age, mother's educational attainment, mother's ethnic and/or national group, father's age and place of usual residence, and site of delivery. Moreover, despite some evidence that suggested that the data was being collected, at least in some of the examined countries, it was not being disclosed to the public at large.

Healthcare capacity data was a major challenge for the region, with only three countries scoring in this indicator. The availability of real-time data was an even more significant challenge, with the only evidence of such systems being detected in Ukraine. Even then, it was limited in scope and timeframe.

There was a significant lack of open vaccination data in all of the assessed countries, with the exception of Ukraine, which provided regularly updated machine-readable datasets. In all other cases, the data was presented in aggregated forms through graphs and interactive maps or otherwise only available through short briefs and narrative reports.

There was virtually no evidence of vaccination data being disaggregated by the disability status or membership of marginalized populations among the vaccinated individuals. Specific information about the vaccination of incarcerated individuals was only made available in Georgia.



Conclusion and Recommendations

The insights deriving from the analysis of the GDB's survey results focused on governments' responsibilities such as issuing, collecting, distributing, and publishing health and Covid-19 data. It is clear how important identifying essential information for monitoring and managing the pandemic is. It is crucial to define and discern the minimum required and mandatory information and the optional information. It is important to identify the minimum geographical granularity among the minimal requirements.








Standards for health and Covid-19 data collection, distribution, and publishing are ideally set by government agencies or international organizations. These standards may be developed through a collaborative process involving input from various stakeholders, non-governmental actors, healthcare professionals, and data experts.

There may be a need for legislation to ensure that these standards are followed and to ensure the protection of sensitive personal information. Additionally, legislation may be necessary to establish legal requirements for data collection and reporting, as well as to provide penalties for non-compliance. This can help to ensure that the data is accurate and reliable, and that it is used appropriately to inform public health policy and decision-making.

THE ANALYSIS OF GDB RESULTS REVEALS BROAD TRENDS AND CHALLENGES SPECIFIC TO THE REGION:

- Q Countries in the region need a rigid regulatory framework for open data access, as most countries are not guided by uniform open data standards. In this regard, a strong political will is needed to raise awareness among decision-makers about the importance of open data ecosystems in the country.
- Q A critical component is to increase the capacity of all relevant actors involved in the management process of open data. In particular, the persons responsible for collecting, processing, publishing, and using the data. In this regard, raising the qualification of public servants in data-sharing and management is a particular priority.
- Q Capacity-building activities focused on civil society, media, and the private sector are essential to increase the positive outcomes/impacts stemming from the practical uses of open data. Establishing partnerships between different stakeholders on open data collection, publication, and use is crucial. The multisectoral and multilateral collaboration will significantly increase the impact of data initiatives on public welfare. Various stakeholders have the potential to collaborate on their efforts and develop innovative services and new products that have a positive impact on the public good and well-being of citizens.
- Q The benefits of open data to civil society and the media are undeniable, although the economic potential of the data currently needs to be fully realized and encouraged. Focusing on the economic aspects of open data makes it possible to intensify and further develop open data practices in the region.

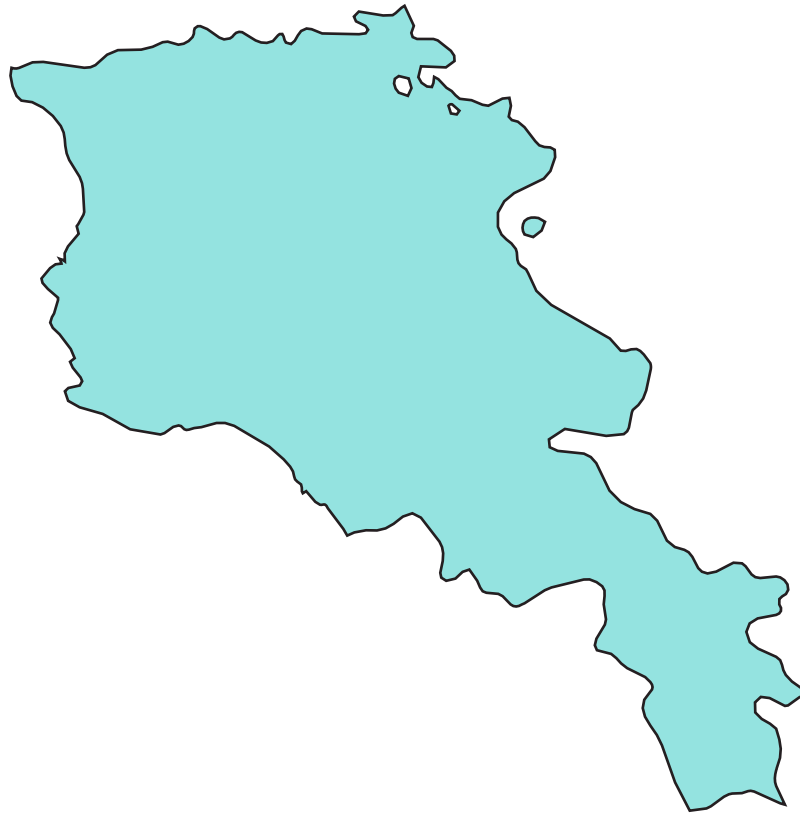
SPECIFIC RECOMMENDATIONS IN TERMS OF HEALTH AND COVID-19 DATA FOR THE COUNTRIES OF EASTERN EUROPE AND CENTRAL ASIA:

-  Provide the minimal geographic granularity, the time interval (i.e. daily), the quality, and the number of information (data fields).
-  Depersonalize and disclose vaccination data at the level of individual records, similar to Ukraine's practice.
-  In order to ensure completeness of birth data, add data points for gestational age, birth weight, live-birth order, the interval between last, age of the mother, educational attainment of the mother, ethnic and/or national group of mother, age of the father, etc.
-  Increase accessibility of data available on NSO websites by introducing more open systems such as PXWEB.
-  Implement more standardized systems for processing CRVS data, especially mortality data, such as the ICD-10 or equivalent.
-  Define quality and timing and consistent data revisions to guarantee data quality.
-  Begin working towards developing unified healthcare data systems to increase real-time capacity data availability.



Country Profiles - Their Performance in the Health and Covid-19 module of GDB

Armenia



Armenia was evaluated with 49.14 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

The Civil Status Acts Registration Agency (CSARA) of the Ministry of Justice of the Republic of Armenia is responsible for civil registration.⁹ Armenia's modern CRVS is fully digitized, with all registered information being entered directly into the electronic civil register. The system enables easier data sharing and registration of vital events.¹⁰ CSARA data was not available online but was accessible by other state agencies through APIs with the help of the operator agency- EKENG CJSC¹¹.

Data points	Availability
Mortality information includes data about	
Age	Yes
Sex, and/or gender	Yes
Geographic location	Yes
Cause of death	Yes
Birth information includes data about	
Sex and/or assigned gender of child	Yes
Gestational age	Yes
Birth weight	Yes
Live-birth order and interval between last and previous live births to mother	Yes
Place of occurrence	Yes
Place of usual residence of mother	No
Month of occurrence	Yes
Place of registration and month of registration	Yes
Age of the mother	Yes
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence,	No
Site of delivery	Yes
Attendant at birth	No
Month in which prenatal care began	No

⁹ Ministry of Justice of the Republic of Armenia

¹⁰ The Center of Excellence for CRVS Systems. (2020). Snapshot of CRVS System of Armenia, Report

¹¹ E-governance in the Republic of Armenia

Data Characteristics	Availability
Dataset is available free of charge	Partial
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Yes
Machine-readable formats	Partial ¹²
In bulk availability	No

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

The United Information System of Electronic Healthcare in the Republic of Armenia (ARMED) is a comprehensive and synchronous data-transmission platform for three types of data: clinical, administrative, and financial. The platform presents the capacity of the healthcare system, mainly information about vacant beds in medical institutions.¹³

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	Yes
The number and availability of regular beds and ICU beds	Yes
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

¹² The database belonging to the Civil Status Acts Registration Agency is machine-readable and can be accessible for other state agencies with APIs. However, the datasets were not available online for citizens.

¹³ The sources initially indicated by the GDB researcher are no longer accessible and no evidence of alternative sources could be located.

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

Information on vaccinations was available through news reports published every Monday by the Ministry of Health of Armenia. The information concerned the number of people vaccinated, and the number of first and second doses administered.¹⁴ However, no open data on specific aspects of vaccination, including demographic information, was available.

Indicator	Availability
Geographic distribution of vaccinations	No
Age of the vaccinated individuals	No
Sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

¹⁴ Ministry of Health of Armenia

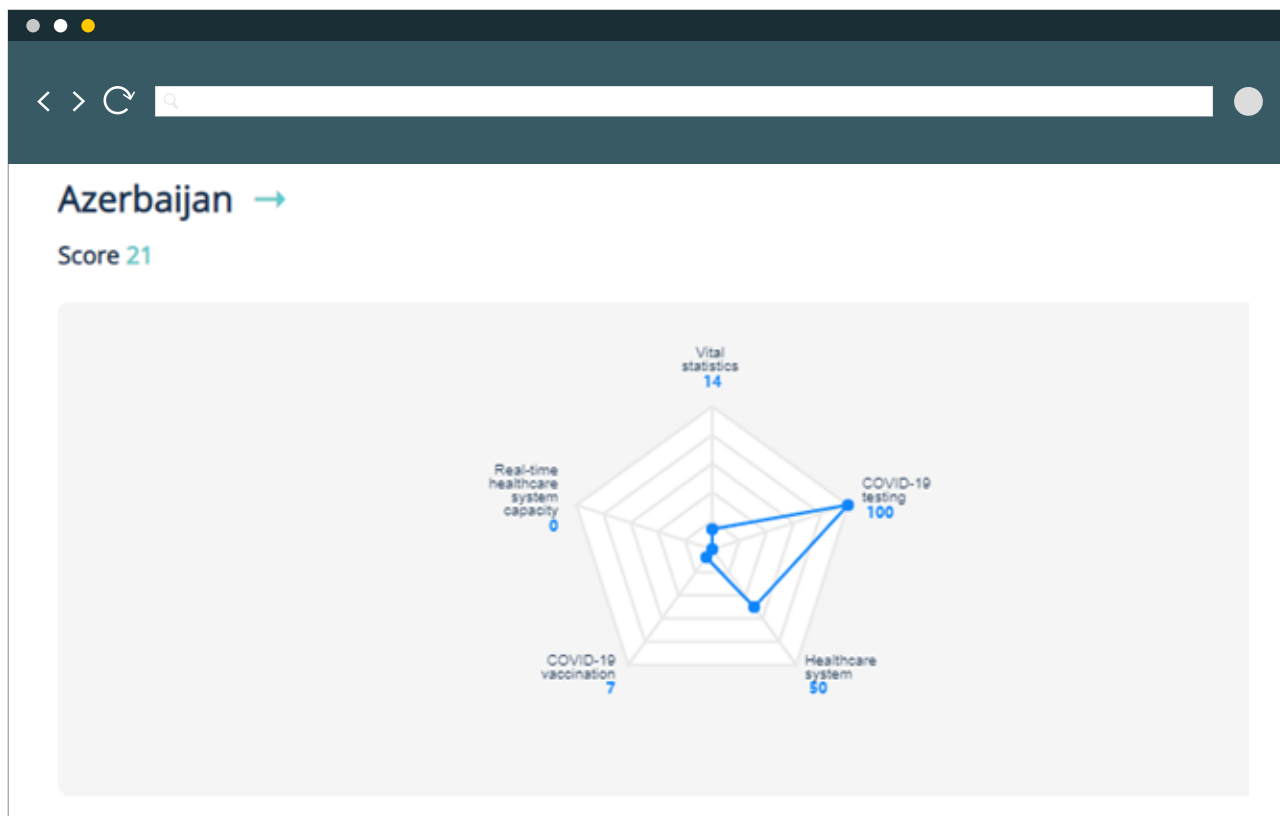
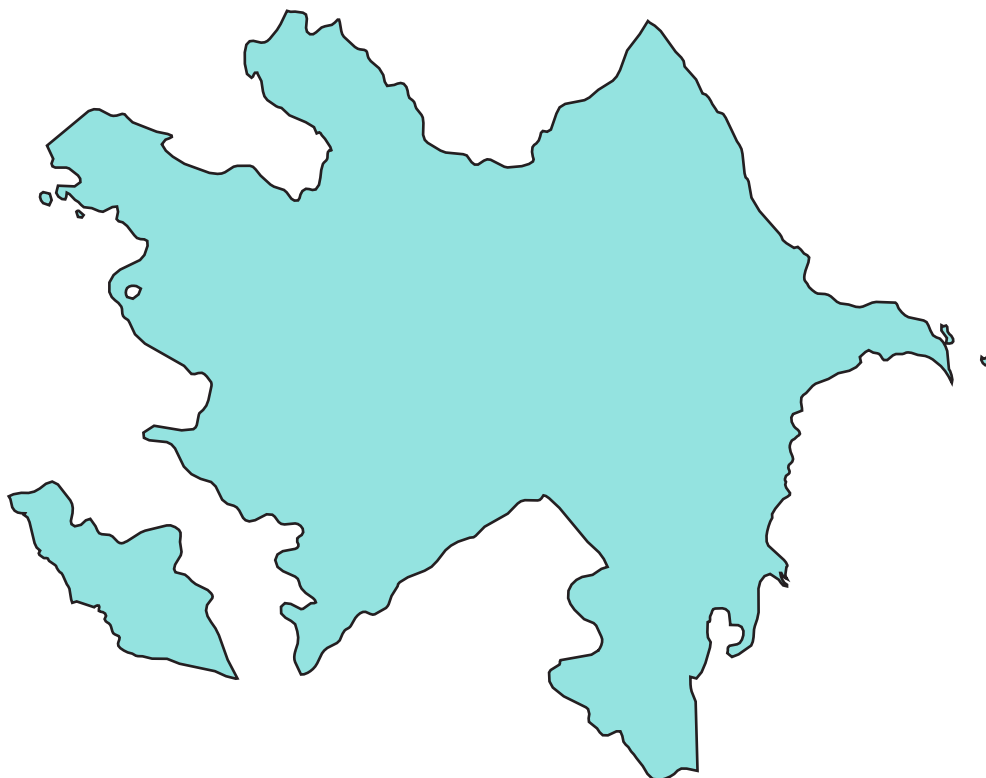
Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

MAJOR STRENGTHS AND WEAKNESSES

Strengths
CRVS data available through a PXWEB database
Multiplicity of CRVS datasets being collected
Evidence of healthcare capacity data being collected and accessible in real time for institutions

Weaknesses
Some CRVS indicators unavailable on the PXWEB database despite evidence of being collected
Lack of open and structured formats in terms of vaccination data
Real time healthcare capacity data inaccessible to the public

Azerbaijan



Azerbaijan was evaluated with 20.55 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

Azerbaijan's National Statistics Office regularly publishes CRVS information. Although it did not comply with the WHO methodology, the coverage was relatively close. The dataset published by the Statistics Information Service had information about mortality, birth, natural population increase, child mortality under one year old, mothers' age during birth, and mother's mortality.¹⁵ The Statistics Committee also published annual statistics about the main causes of death, main indicators of healthcare, doctors' professions, disease statistics by age and gender, and treatment and prevention services for the population. The data is updated annually.

Data points	Availability
Mortality information includes data about	
Age	Yes
Sex, and/or gender	Yes
Geographic location	Yes
Cause of death	Yes
Birth information includes data about	
Sex and/or assigned gender of child	No
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother	No
Place of occurrence	No
Place of usual residence of mother	No
Month of occurrence	No
Place of registration and month of registration	No
Age of the mother	Partial
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence,	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

¹⁵ Azerbaijan Statistical Information Service

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

Azerbaijan's National Statistics Office published data about the number of beds by the type and number of beds per 10,000 population (e.g. surgical, oncological, gynecological, etc.). However, this information was published annually and is highly aggregated.

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	No
The number and availability of regular beds and ICU beds	No
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

Elementary vaccination statistics (covering the number of first and second vaccination) were available on the website of the State Mandatory Health Insurance Agency of Azerbaijan. An appointment system developed by the Agency, allowed the users to access real-time information from any (possible) clinic about which vaccine was available and the day for vaccination.¹⁶ COVID-19 information and vaccination statistics were updated on a daily basis.

Indicator	Availability
Geographic distribution of vaccinations	No
Age of the vaccinated individuals	No
sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

¹⁶ [Official webpage of State Mandatory Health Insurance Agency](#)

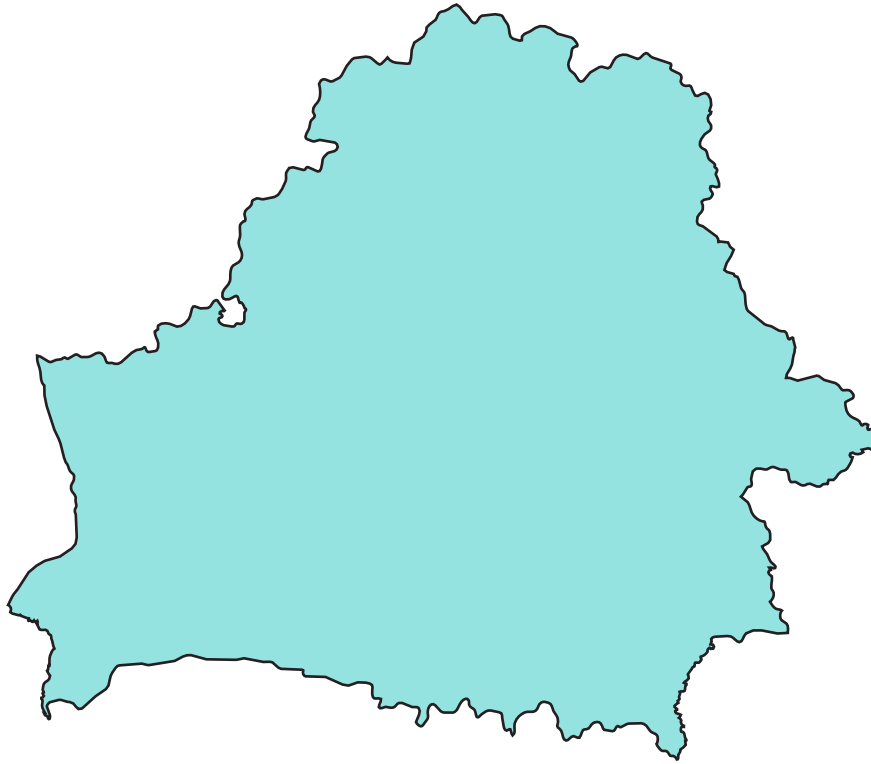
Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

MAJOR STRENGTHS AND WEAKNESSES

Strengths
Highly disaggregated mortality data
Basic healthcare capacity data updated annually
Daily updated COVID-19 information and vaccination statistics

Weaknesses
Lack of major CRVS indicators
Lack of open and structured formats in terms of vaccination data

Belarus



Belarus was evaluated with 30.24 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

The country's national statistics portal, Belstat,¹⁷ stopped publishing mortality data in June 2020.

The rest of the data available on the portal was heavily aggregated and challenging to process.

Data points	Availability
Mortality information includes data about	
Age	No
Sex, and/or gender	No
Geographic location	Yes
Cause of death	No
Birth information includes data about	
Sex and/or assigned gender of child	No
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother	No
Place of occurrence	Yes
Place of usual residence of mother	No
Month of occurrence	No
Place of registration and month of registration	No
Age of the mother	No
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence,	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

¹⁷ Belarus's National Statistics Portal

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

The Ministry of Health of Belarus¹⁸ did not provide any statistical information. However, the Ministry disclosed daily pandemic-related information (death, vaccination, Covid-19 cases confirmed) through a dedicated telegram channel.

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	No
The number and availability of regular beds and ICU beds	No
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

¹⁸ The Ministry of Health of Belarus

Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

Most Covid-19-related information was provided through the official telegram channel of the Ministry of Health.¹⁹ However, the provided data was scattered among sporadic reports and was missing details on vaccine supply and administration, information about the age, gender, and other attributes of vaccinated individuals.

Indicator	Availability
Geographic distribution of vaccinations	Partial
Age of the vaccinated individuals	No
Sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

¹⁹ Official telegram channel of the Ministry of Health of Belarus

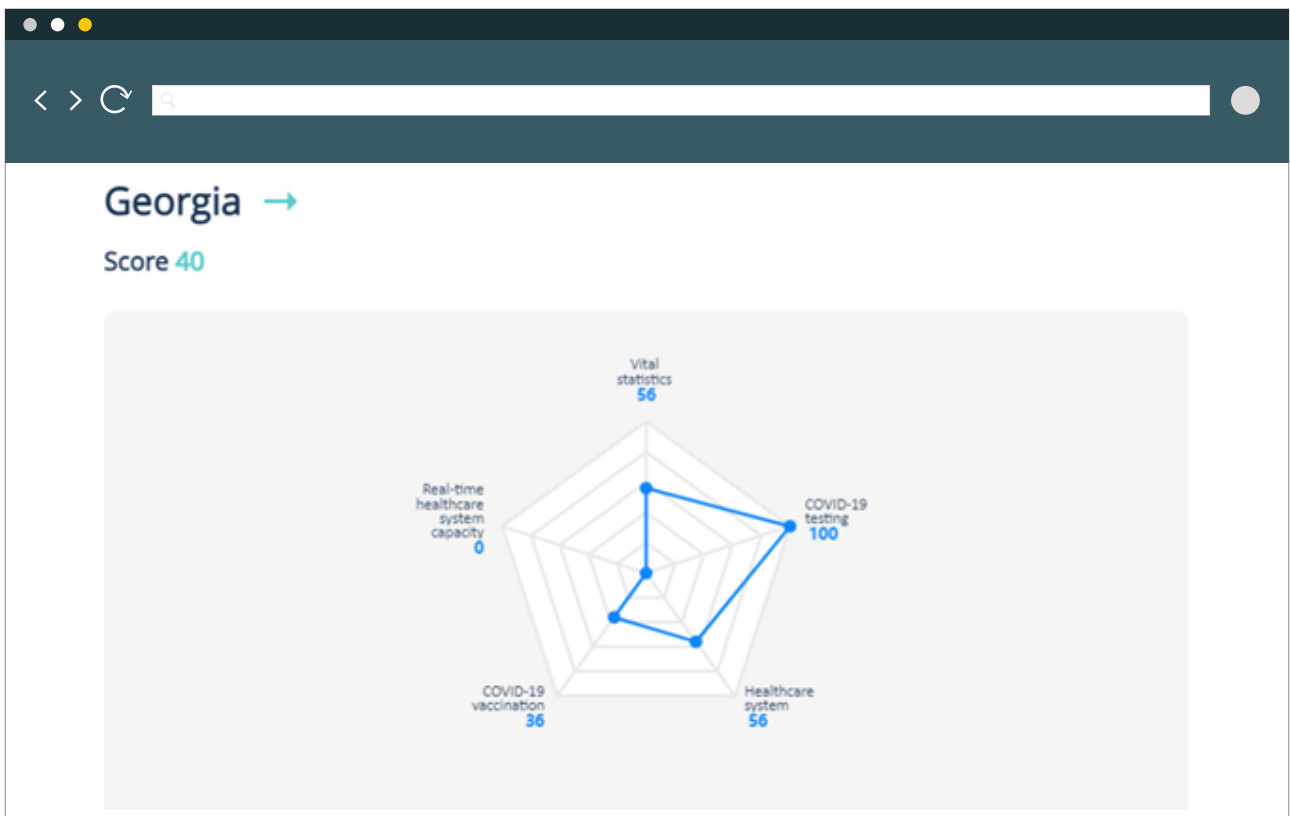
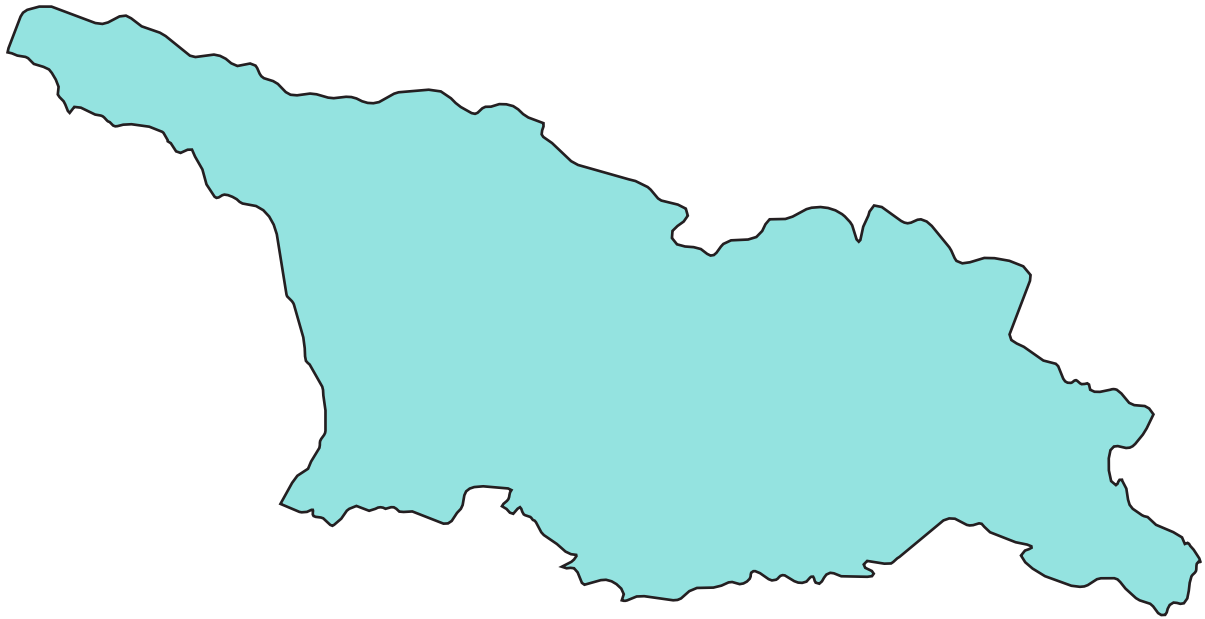
Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

MAJOR STRENGTHS AND WEAKNESSES

Strengths
Regular reports of Covid-19 related data made available for public

Weaknesses
Healthcare capacity data unavailable in any form
CRVS data lacks timeliness
Lack of structured vaccination data

Georgia



Georgia was evaluated with 39.6 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

CRVS data was available through the National Statistics Office.²⁰ The office uses ICD 10 (International Classification of Causes of Death) and provides complete datasets on mortality data. However, the location/cause of death dataset was separate from the age/sex/cause of death dataset, and a unified dataset was unavailable. In addition, the birth data was missing some key indicators, such as the usual residence of mothers, their ethnicity, intervals between births, gestation periods, etc.

Data points	Availability
Mortality information includes data about	
Age	Yes
Sex, and/or gender	Yes
Geographic location	Yes
Cause of death	Yes
Birth information includes data about	
Sex and/or assigned gender of child	Yes
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother ²¹	Partial
Place of occurrence	Yes
Place of usual residence of mother	No
Month of occurrence	Yes
Place of registration and month of registration	No
Age of the mother	Yes
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence,	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

²⁰ [National Statistics Office Portal](#)

²¹ Data included birth-order, but was missing information about the interval between last and previous live births to mother.

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Yes
Machine-readable formats	Yes
In bulk availability ²²	Partial

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

The national Covid-19 Prevention Platform provided real-time data on the number of Covid Patients under hospital supervision.²³ Furthermore, the National Statistics Office provided data on the total quantity of hospital beds in the country.²⁴ Using these two numbers, media outlets often estimate the current capacity of the healthcare system. However, official real-time data was not being produced in Georgia at the time of the assessment.

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	No
The number and availability of regular beds and ICU beds	No
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

²² Extracts of data can be downloaded in xls format, but the entire dataset is not available as a single bulk download.

²³ [Covid-19 Prevention Platform](#)

²⁴ [National Statistics Office - data on the total quantity of hospital beds](#)

Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability ²⁵	No

VACCINATION DATA

The National Center for Disease Control provided a statistics section dedicated to the vaccination process on their specialized website.²⁶ The data was presented in graphs and interactive maps, but bulk data and machine-readable datasets were unavailable. Furthermore, the data was missing several key indicators and was highly aggregated. One detail that stood out in comparison to other countries of the region was the availability of data about the vaccination of incarcerated individuals.

Indicator	Availability
Geographic distribution of vaccinations	Partial ²⁷
Age of the vaccinated individuals	Yes
sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	Yes

²⁵ Extracts of data can be downloaded in xls format, but the entire dataset is not available as a single bulk download.

²⁶ [Statistics section of the The National Center for Disease Control](#)

²⁷ Geographic distribution data was only available on the regional level.

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No ²⁸

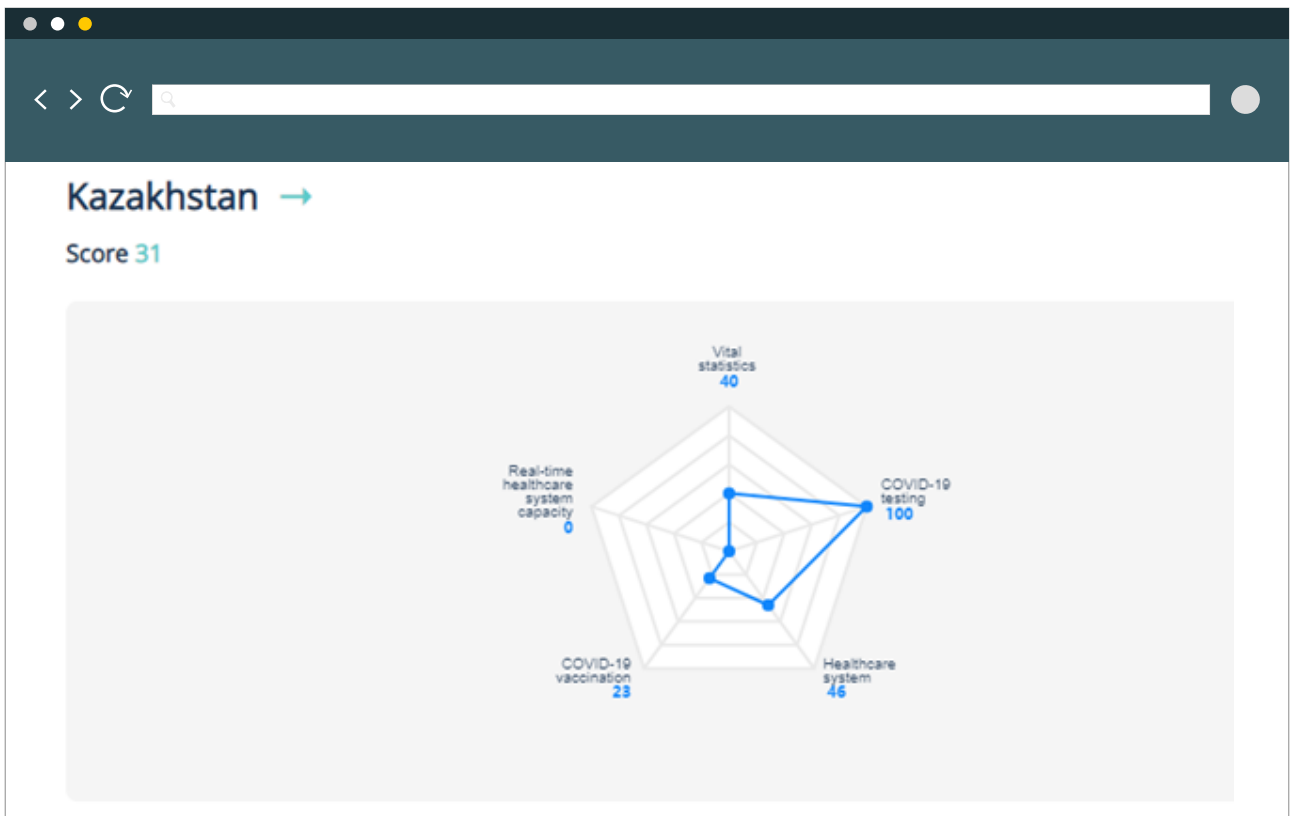
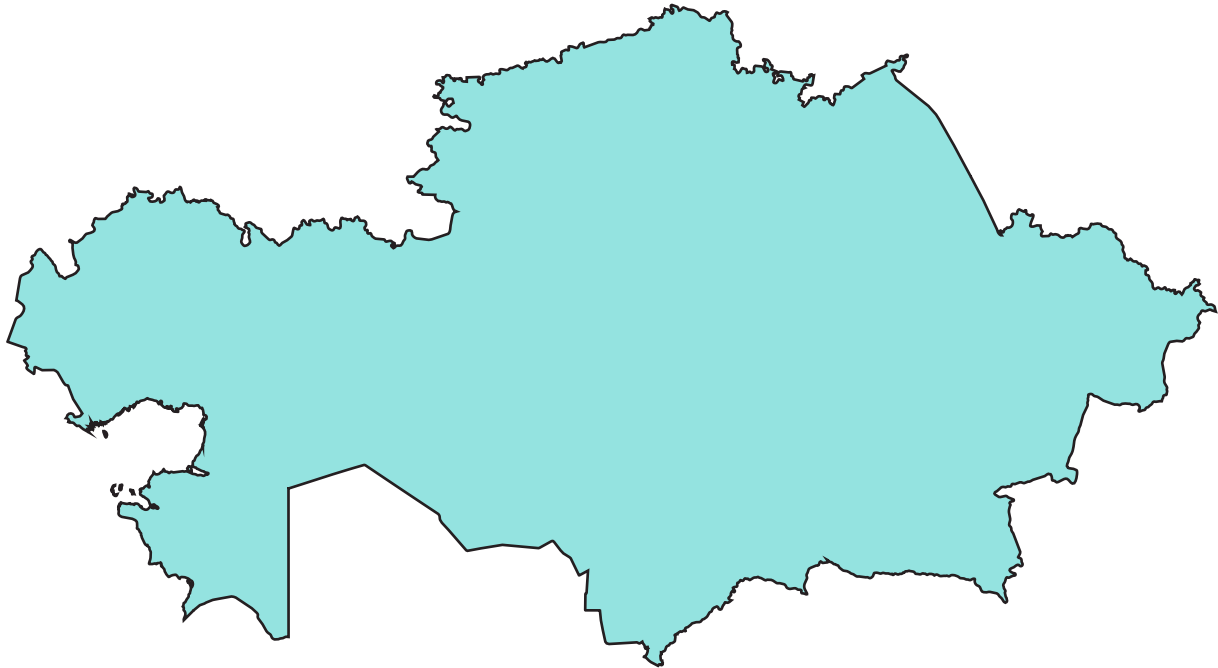
MAJOR STRENGTHS AND WEAKNESSES

Strengths
CRVS data available through a PXWEB database
Vaccination Data published on dedicated portal
Mortality data available in accordance with ICD 10 standards
Availability of data about vaccination of incarcerated individuals

Weaknesses
Lack of Machine readable vaccination data
Lack of disaggregation in all categories
Lack of major CRVS indicators

²⁸ Extracts of data could be downloaded in xls format, but the entire dataset was not available as a single bulk download.

Kazakhstan



Kazakhstan was evaluated with 30.82 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

The government of Kazakhstan publishes incomplete CRVS information on the website of the Bureau of National statistics.²⁹ For example, mortality and birth information only included primary data (region, sex, and age group). In addition, the government uses the ICD format for registering deaths, but only published aggregate information.

Data points	Availability
Mortality information includes data about	
Age	No
Sex, and/or gender	Yes
Geographic location	No
Cause of death	Yes
Birth information includes data about	
Sex and/or assigned gender of child	No
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother	No
Place of occurrence	Yes
Place of usual residence of mother	No
Month of occurrence	Yes
Place of registration and month of registration	No
Age of the mother	No
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence,	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

²⁹ Bureau of National statistics - Demographic data

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Yes
Machine-readable formats	No
In bulk availability	No

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

Information about the capacity of the healthcare system was available partially on the website of Kazakhstan's Bureau of National statistics.³⁰ However, it was not in real-time and did not provide the context in terms of availability. The government provided aggregate figures on the number of facilities and ICU beds, but no information about administered vaccines and Covid tests was available.

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	No
The number and availability of regular beds and ICU beds	No
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

³⁰ Bureau of National statistics

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

During the pandemic, the government of Kazakhstan created an official COVID-19 info website,³¹ which contained updates with statistics: total and new cases, deaths per day, mortality and recovery rates, current active cases and vaccination information. However, the latter was only published as narrative news articles, not disclosed as datasets. General information was also available on the website of the Ministry of Health in the same form.³²

Indicator	Availability
Geographic distribution of vaccinations	Partial ³³
Age of the vaccinated individuals	No
Sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

³¹ [The COVID-19 information website](#)

³² [The website of the Ministry of Health of Kazakhstan](#)

³³ The publication contains only general data on the number of vaccinated people.

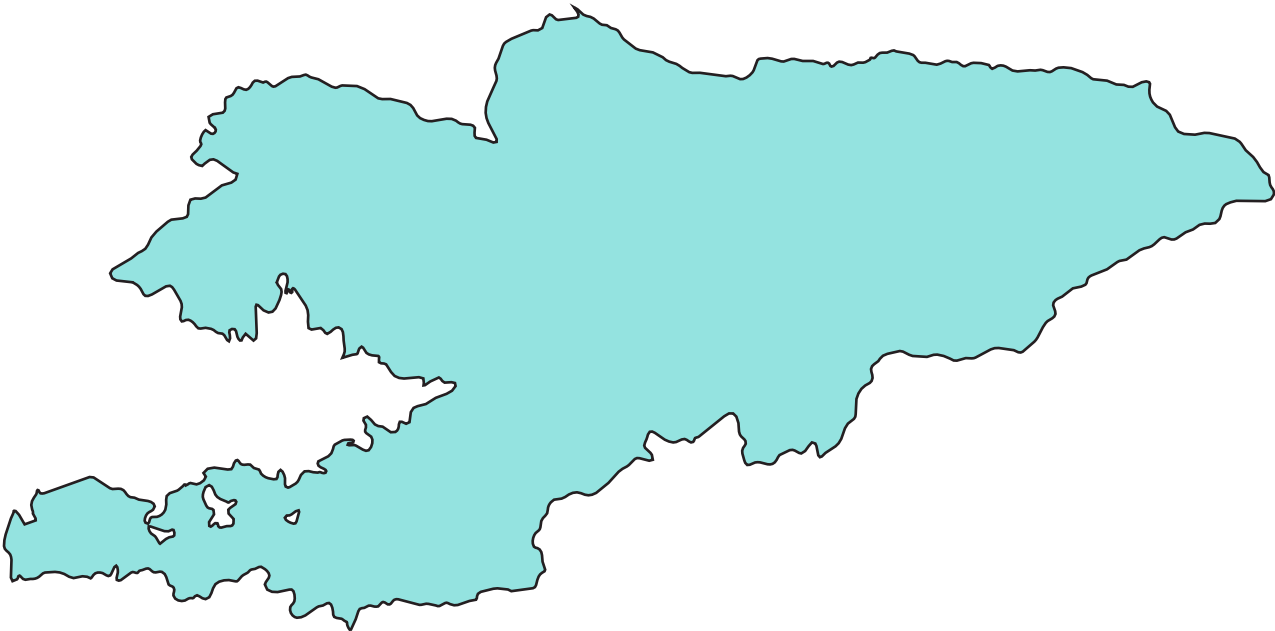
Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Yes
Machine-readable formats	No
In bulk availability	No

MAJOR STRENGTHS AND WEAKNESSES

Strengths
Dedicated portal for vaccination and Covid-19 data with regular updates
Basic healthcare capacity data available on the NSO's website
ICD-10 standards in use

Weaknesses
Lack of disaggregation of CRVS data
Lack of real-time healthcare capacity data
Lack of open vaccination data

Kyrgyz Republic



The Kyrgyz Republic was evaluated with 41.27 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

The CRVS data is provided by the National Statistical Committee of the Kyrgyz Republic. However, the mortality data included only regional aggregation and a limited list of causes of death.³⁴

Data points	Availability
Mortality information includes data about	
Age	No
Sex, and/or gender	No
Geographic location	Yes
Cause of death	Yes
Birth information includes data about	
Sex and/or assigned gender of child	No
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother	No
Place of occurrence	Yes
Place of usual residence of mother	No
Month of occurrence	No
Place of registration and month of registration	No
Age of the mother	No
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence,	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

³⁴ [The website of the National Statistical Committee of the Kyrgyz Republic](#)

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Partial
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Yes
Machine-readable formats	Yes
In bulk availability	Partial

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

The healthcare capacity data was available on the front page of the Ministry of Health of the Kyrgyz Republic.³⁵ The information about the total number of hospitals, beds and active medical personnel was updated, but real-time capacity data was not disclosed.

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	Yes
The number and availability of regular beds and ICU beds	Yes
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

³⁵ [Website of the Ministry of health of the Kyrgyz Republic](#)

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Partial
Data is timely and updated	Partial
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

E-Health Center under the Ministry of Health of the Kyrgyz Republic has developed a portal to display vaccination data³⁶. The portal featured an interactive map to better visualize data, a Directory of vaccination points, and aggregated vaccination data.

Indicator	Availability
Geographic distribution of vaccinations	Yes
Age of the vaccinated individuals	No
sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

³⁶ Vaccination data portal of The kyrgyz Republic

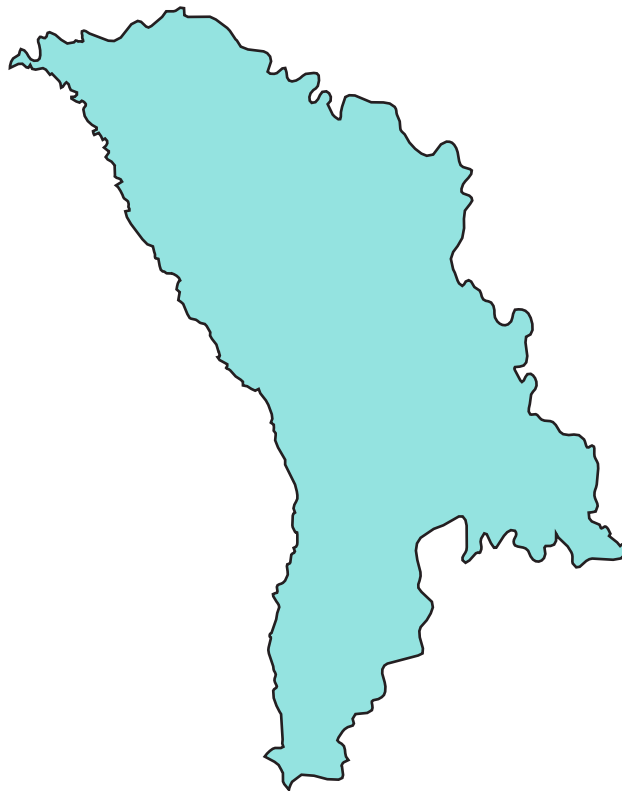
Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Partial
Machine-readable formats	No
In bulk availability	No

MAJOR STRENGTHS AND WEAKNESSES

Strengths
High accessibility of CRVS data
Up to data healthcare capacity data
Dedicated portal for vaccination data with visualization tools

Weaknesses
CRVS data missing major indicators
Lack of real-time healthcare capacity data
Lack of open vaccination data

Republic of Moldova



The Republic of Moldova was evaluated with 44.77 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

Some of the data about vital statistics assessed under this indicator were available in the “Statbank” provided by the National Bureau of Statistics. For instance, the data on births was presented in aggregated datasets and offered information about live-births by sex, districts, age of mother and father, order, etc.³⁷ Mortality information included data about age, sex and/or gender, geographic location, and cause of death.³⁸

Data points	Availability
Mortality information includes data about	
Age	Yes
Sex, and/or gender	Yes
Geographic location	Yes
Cause of death	Yes
Birth information includes data about	
Sex and/or assigned gender of child	Yes
Gestational age	Yes
Birth weight	No
Live-birth order and interval between last and previous live births to mother	Partial ³⁹
Place of occurrence	No
Place of usual residence of mother	No
Month of occurrence	No
Place of registration and month of registration	No
Age of the mother	Yes
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

³⁷ [Birth data on the website of the National Bureau of Statistics](#)

³⁸ [Mortality data on the website of the National Bureau of Statistics](#)

³⁹ Only live-birth order data is available.

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Yes
Machine-readable formats	Yes
In bulk availability	No

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

Data on the real-time capacity of the healthcare system was not available in the Republic of Moldova as open data, nor any other format. However, the statistics of Healthcare resources could be found in the “Statbank” of the National Bureau of Statistics and included the number of medical institutions by forms of ownership, number of physicians by speciality, sex, and administrative units, number of paramedical personnel, by speciality and administrative units, number of Pharmacies and pharmacists administrative units, number of hospital beds, by profile and administrative units. However, these datasets were not updated in real-time.⁴⁰

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	No
The number and availability of regular beds and ICU beds	No
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

⁴⁰ Statistics of Healthcare resources

Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

Data about the vaccination process in Moldova was not available in a structured format as open data. However, some pertinent information was included in PPT files using graphs or in scanned PDF files of vaccine distribution orders signed by the Ministry of Health.⁴¹

Information from scanned PDF files about vaccine distribution was extracted from the orders signed and published by the Ministry of Health. The data was then presented in animated graphs on the Tender.health portal.⁴²

Indicator	Availability
Geographic distribution of vaccinations	Yes
Age of the vaccinated individuals	Yes
sex and/or gender of the vaccinated individuals	Yes
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

⁴¹ [Weekly reports on the vaccination process by the Ministry of Health of Moldova](#)

⁴² [Tender.health vaccine data](#)

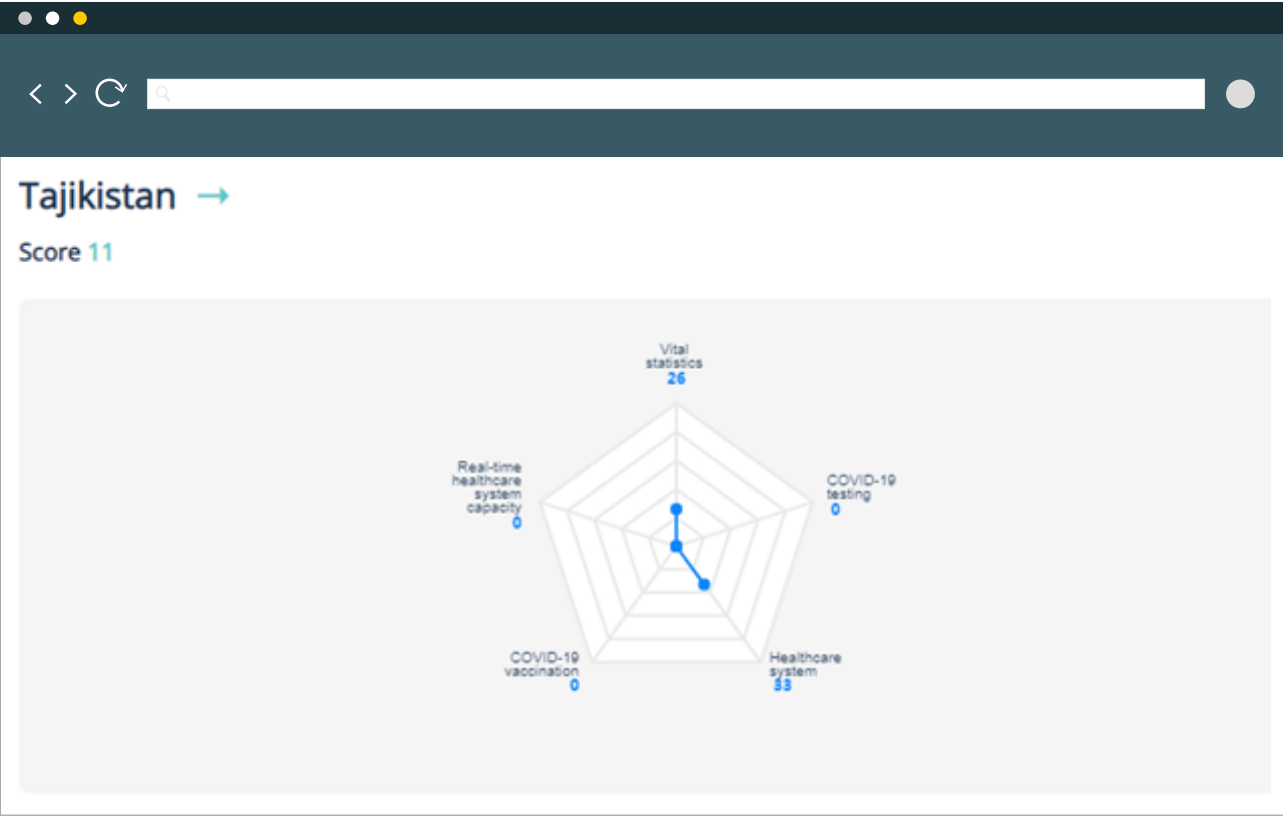
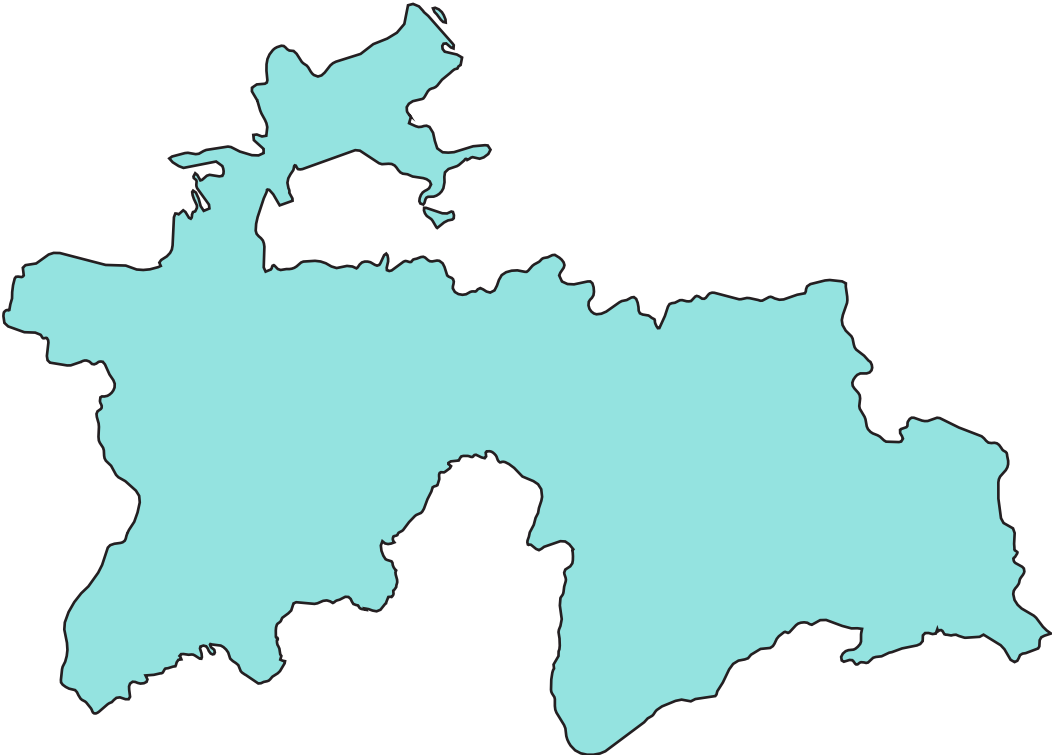
Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

MAJOR STRENGTHS AND WEAKNESSES

Strengths
CRVS data available through a PXWEB portal
Healthcare capacity data available in static form
Vaccination data regularly made available to public
Multiplicity of birth and mortality indicators available

Weaknesses
Lack of real-time availability of healthcare capacity data
Lack of open formats for vaccination data

Tajikistan



Tajikistan was evaluated with 11.29 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

The data was available until 2020 on the website of Tajikistan's National Statistics Office,⁴³ although the platform seemed to suffer from some technical difficulties regarding the download functionality. Furthermore, most of the assessed datasets lack disaggregation and were missing important categories, such as disaggregation by month, cause of death, age, etc.

Data points	Availability
Mortality information includes data about	
Age	No
Sex, and/or gender	No
Geographic location	Partial ⁴⁴
Cause of death	No
Birth information includes data about	
Sex and/or assigned gender of child	Partial ⁴⁵
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother	No
Place of occurrence	No
Place of usual residence of mother	No
Month of occurrence	No
Place of registration and month of registration	No
Age of the mother	No
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence,	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

⁴³ [The Website of Tajikistan's National Statistics Office](#)

⁴⁴ The data only provides aggregated annual numbers by region

⁴⁵ The data only provided aggregated annual numbers by region.

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	Yes
Machine-readable formats	Partial ⁴⁶
In bulk availability	Yes

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

There was no evidence of real-time capacity data of the healthcare system being collected or consolidated in Tajikistan.

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	No
The number and availability of regular beds and ICU beds	No
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

⁴⁶ The data given in the excel files lack disaggregation.

Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

Tajikistan did not provide direct online access to any vaccination data, but it can be assumed that the government was collecting it, since aggregated numbers have been reported to WHO.⁴⁷

Indicator	Availability
Geographic distribution of vaccinations	No
Age of the vaccinated individuals	No
sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

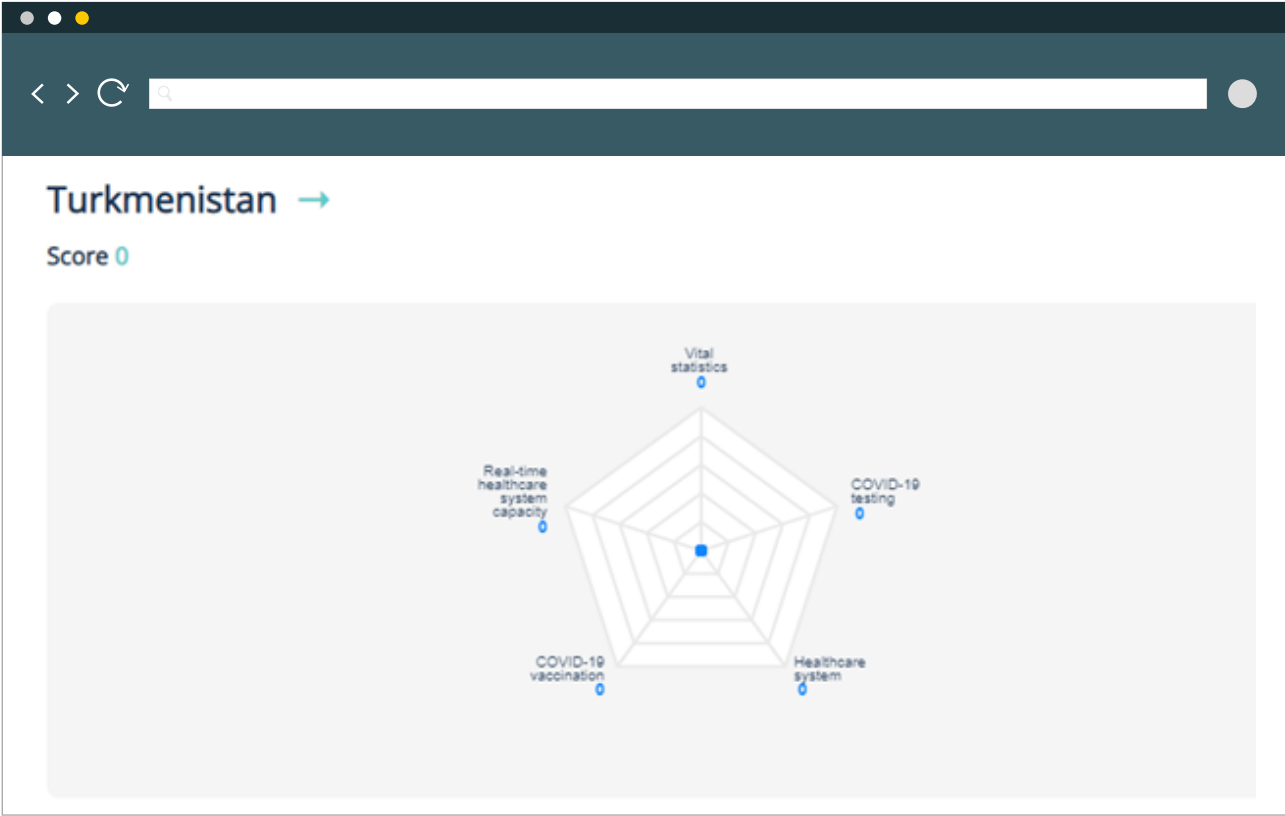
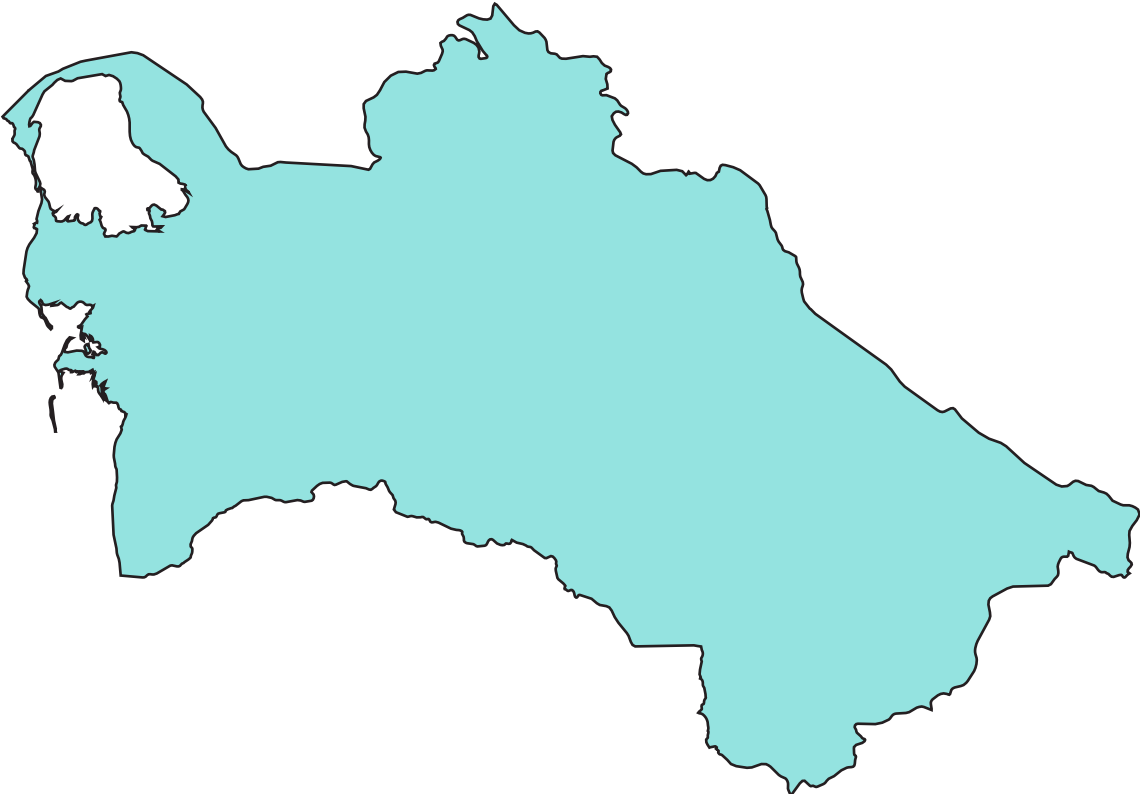
Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

MAJOR STRENGTHS AND WEAKNESSES

Strengths
Vaccination data is being collected and supplied to international organizations

Weaknesses
Lack of updates for CRVS data
Lack of major CRVS indicators
No evidence of Healthcare capacity data being collected
Vaccination data unavailable to public in any form

Turkmenistan



Turkmenistan was evaluated with 0 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

No evidence suggests that Turkmenistan had CRVS information available as open data. The CRVS information collection and processing is regulated by the Law on Acts of Civil Status (2019). The Law stipulates that this data is collected, processed, and maintained by the territorial departments (bodies) of registration of acts of civil status. The Law establishes the Centralized state registry of acts of civil status that stores CRVS information in an electronic format. Access to this data is permitted to designated state authorities only. Authorities responsible for the registry maintenance are prohibited from disclosing this information to third parties, except in cases provided by the laws of Turkmenistan. No detailed information was given about such exceptional cases. Overall, the available evidence suggested that Turkmenistan did not have an open CRVS data system.

Data points	Availability
Mortality information includes data about	
Age	No
Sex, and/or gender	No
Geographic location	No
Cause of death	No
Birth information includes data about	
Sex and/or assigned gender of child	No
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother	No
Place of occurrence	No
Place of usual residence of mother	No
Month of occurrence	No
Place of registration and month of registration	No
Age of the mother	No
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence,	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

Turkmenistan did not make information about the real-time capacity of the healthcare system available as open data. There was no evidence suggesting that the government was in the process of developing such a database. The website of the Ministry of Health and Medical Industry of Turkmenistan provided a brief and generic description of each of the country's healthcare facilities, including information about the number of beds.⁴⁸ Public health data for Turkmenistan was very scarce as the government is generally reluctant to make it open for public scrutiny.⁴⁹ Independent sources reported, for instance, that during the COVID-19 outbreak in the country, the government ordered the refurbishment of regular hospitals and existing commercial facilities to accommodate patients suspected of having COVID-19, indicating insufficient capacities of medical institutions.⁵⁰

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	No
The number and availability of regular beds and ICU beds	No
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

⁴⁸ Ministry of Health and Medical Industry of Turkmenistan, Healthcare institutions

⁴⁹ A.Yaylymova, COVID-19 in Turkmenistan: No Data, No Health Rights, Health and Human Rights Journal.

⁵⁰ International Partnership for Human Rights and Turkmen Initiative for Human Rights, Human Rights Impact Assessment Of The Covid-19 Response In Turkmenistan

Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

Turkmenistan did not have a governmental website dedicated to publishing all COVID-19 related information and statistics. The government continues to claim that the country is coronavirus-free and had not recorded a single case at the assessment time. However, according to the WHO (World Health Organization) website, 41,993 doses had been administered in Turkmenistan as of April 3, 2021.⁵¹

Indicator	Availability
Geographic distribution of vaccinations	No
Age of the vaccinated individuals	No
sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

⁵¹ WHO information dashboard - 13,514,000 doses administered as of December 12, 2023

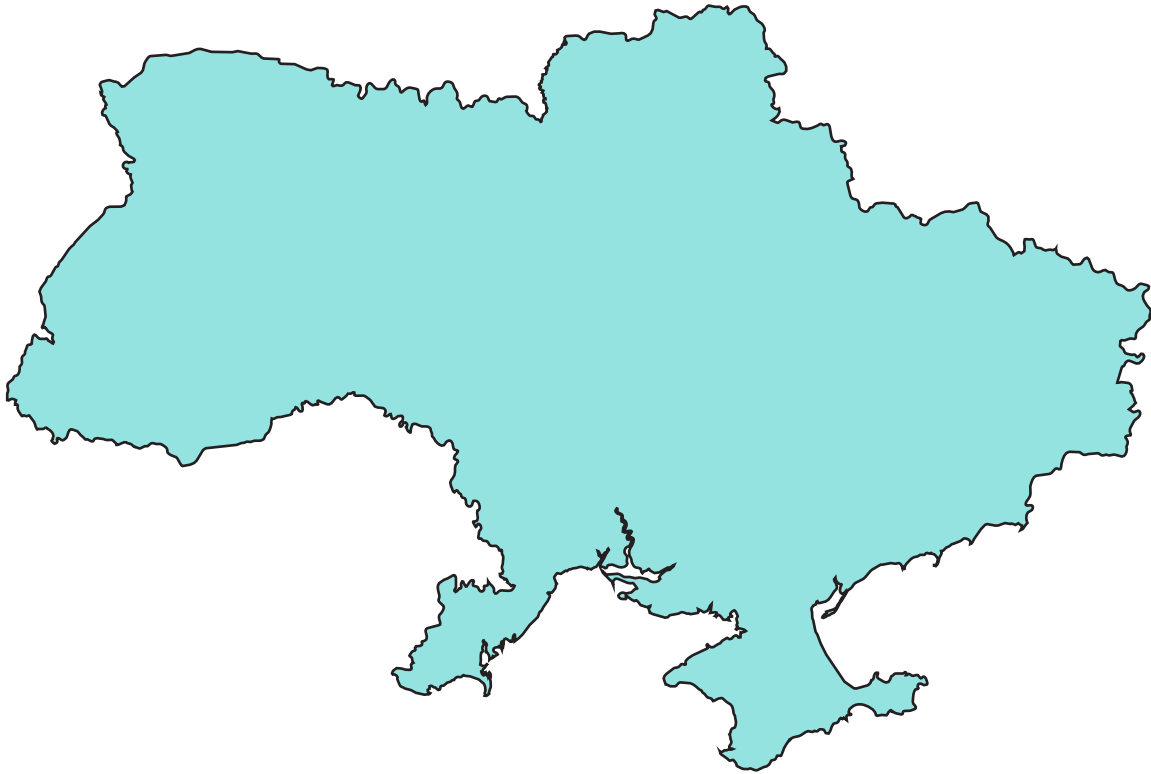
Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

MAJOR STRENGTHS AND WEAKNESSES

Strengths
Vaccination data is being collected and supplied to international organizations
Overall description of healthcare facilities available through government website
Existing evidence that CRVS information is being collected and stored electronically

Weaknesses
Lack of overall openness
CRVS data unavailable to public
Vaccination data unavailable to public in any form

Ukraine



Ukraine was evaluated with 55.15 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

The CRVS data published by the State Statistic Office was very aggregated and scattered.⁵² There were almost no apparent CRVS data standards requirements. The COVID-19 pandemic caused significant delays in publishing data about the causes of death.⁵³

Data points	Availability
Mortality information includes data about	
Age	No
Sex, and/or gender	No
Geographic location	No
Cause of death	Partial ⁵⁴
Birth information includes data about	
Sex and/or assigned gender of child	No
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother	No
Place of occurrence	No
Place of usual residence of mother	No
Month of occurrence	No
Place of registration and month of registration	No
Age of the mother	No
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

⁵² [The State Statistics Office website](#)

⁵³ [The State Statistics Office's Announcement](#)

⁵⁴ Data is aggregated at country level

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	Partial ⁵⁵
Machine-readable formats	Yes
In bulk availability	Partial

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

Healthcare data about the availability of medical facilities were made available in real-time during the COVID-19 pandemic. However, the Ministry of Health did not publish relevant open data on the Open Data Portal besides outdated aggregated statistics.⁵⁶ The government launched the dedicated portal in the spring of 2020 and started to publish data about COVID-19,⁵⁷ but not about the general situation in hospitals. The National Health Service published data about some issues of the healthcare system and COVID-19 on their portals and the Open Data portal.⁵⁸ By the end of 2020, the National Security Council of Ukraine launched their portal and dashboard to collect and present data from the Information System "Meddata" and present as analytical panels data about COVID-19-related topics, and hospitals.⁵⁹

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	Partial ⁶⁰
The number and availability of regular beds and ICU beds	Yes
Real-time availability	Yes
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	Yes
The number, type, and availability of COVID-19 tests	Yes
The number, type, and availability of COVID-19 vaccines	Yes

⁵⁵ Data about cause of death is available since 2015.

⁵⁶ [Ministry of Health page on the Open Data Portal](#)

⁵⁷ [COVID governmental portal](#)

⁵⁸ [The National Health Service portal and data](#)

⁵⁹ [The National Security Council portal and data](#)

⁶⁰ Data available only regarding COVID-related facilities and hospitals

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Partial ⁶¹
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

Vaccination data were available as a whole on the Open Data Portal.⁶² Data is updated, timely, and disaggregated by gender and age. However, there was no historical data, and part of the intended dataset was missing (such as the number of available vaccines in hospitals, etc). Additionally, there was a dashboard from the National Defense Council⁶³ that also provides data about vaccination.

Indicator	Availability
Geographic distribution of vaccinations	Yes
Age of the vaccinated individuals	Yes
sex and/or gender of the vaccinated individuals	Yes
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

⁶¹ Data is available only from November 2020

⁶² [Vaccination data on the Open Data Portal](#)

⁶³ [Vaccination data on the National Defence Council dashboard](#)

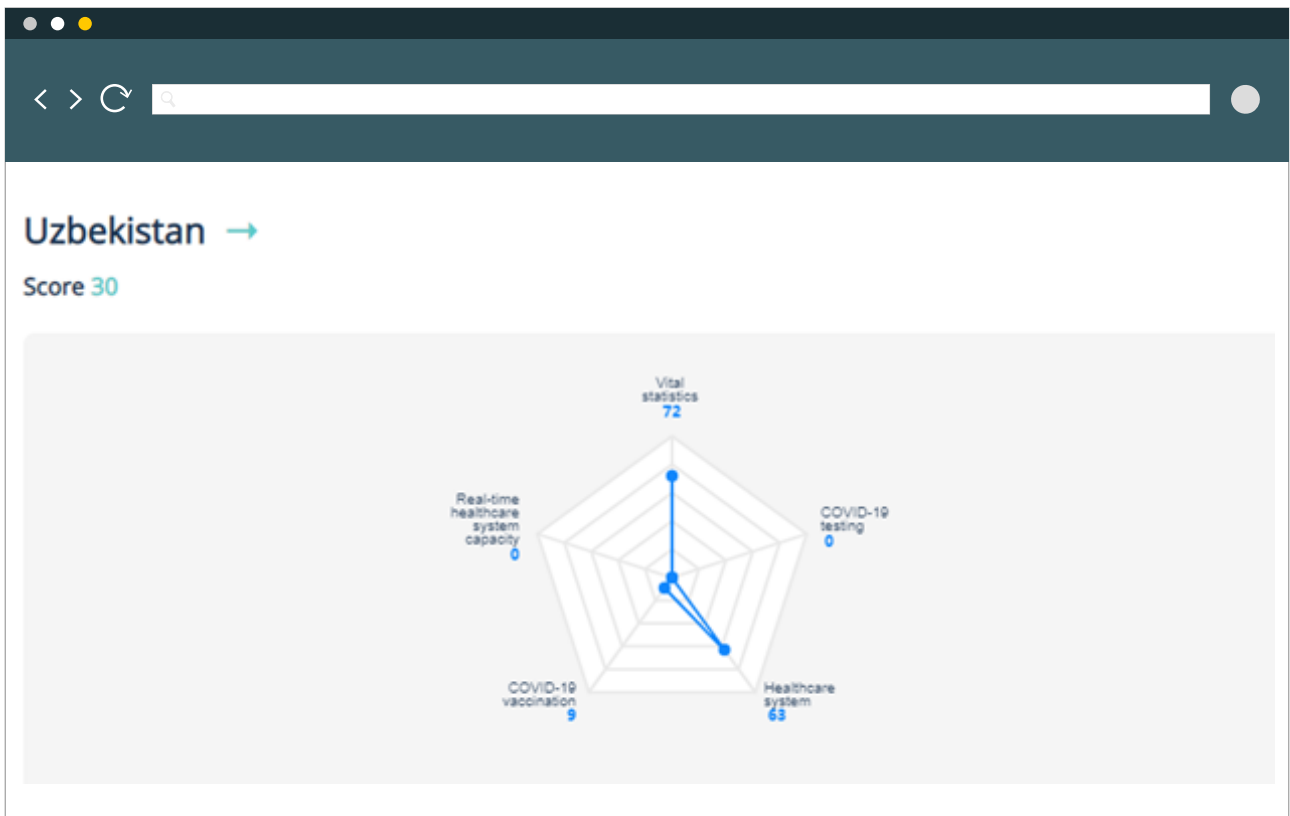
Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country	Yes
Accessible and open official tools are available to help users explore data	Yes
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	No
Machine-readable formats	Yes
In bulk availability	Yes

MAJOR STRENGTHS AND WEAKNESSES

Strengths
Available real-time healthcare system capacity data
High availability of vaccination data
Vaccination data availability

Weaknesses
Real time healthcare capacity data unavailable in machine-readable format
Lack of disaggregation of CRVS data
Missing indicators for vaccination data (number of available vaccines)
Significant delays in disclosure of data due to Covid-19

Uzbekistan



Uzbekistan was evaluated with 31.74 points in this module.

CIVIL REGISTRATION AND VITAL STATISTICS (CRVS) INFORMATION

Uzbekistan's CRVS information was available as open data. It was regularly updated on the official website of the State Committee of the Republic of Uzbekistan on Statistics.⁶⁴ Such information could also be found on the official open data portal of the Republic of Uzbekistan.⁶⁵

Data points	Availability
Mortality information includes data about	
Age	No
Sex, and/or gender	No
Geographic location	Yes
Cause of death	Partial ⁶⁶
Birth information includes data about	
Sex and/or assigned gender of child	Yes
Gestational age	No
Birth weight	No
Live-birth order and interval between last and previous live births to mother	No ⁶⁷
Place of occurrence	Partial ⁶⁸
Place of usual residence of mother	No
Month of occurrence	No
Place of registration and month of registration	No
Age of the mother	Partial ⁶⁹
Educational attainment of the mother	No
Ethnic and/or national group of mother	No
Age of father and place of usual residence	No
Site of delivery	No
Attendant at birth	No
Month in which prenatal care began	No

⁶⁴ [Official website of the State Committee of the Republic of Uzbekistan-Demography Data](#)

⁶⁵ [Official open data portal of the Republic of Uzbekistan](#)

⁶⁶ Data only included major causes of death.

⁶⁷ Data included birth-order, but was missing information about the interval between last and previous live births to mother.

⁶⁸ Only included a note on whether the place of occurrence was rural or urban

⁶⁹ Dataset only included the number of children born to women under 20 years old and the rate of childbirth among adolescents (15-17 years).

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country.	Yes
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	Yes
Historical data is available that allows users to track change over time	Yes
Machine-readable formats	Yes
In bulk availability	Partial ⁷⁰

THE REAL-TIME CAPACITY OF THE HEALTHCARE SYSTEM

Some information about the capacity of Uzbekistan's healthcare system was available as open data, but most of it remained unstructured and was not in real-time.⁷¹ Due to the lack of structure of the relevant information, it was difficult to assess its accessibility. There was open data such as hospitals, newly opened hospitals, and the number of beds in them, but they were not sorted and were very inconvenient to use.

Indicator	Availability
Information about the capacity of the healthcare system at the level of facilities	No
The number and availability of regular beds and ICU beds	No
Real-time availability	No
The number and availability of medical devices or supplies (such as ventilators or oxygen cylinders)	No
The number, type, and availability of COVID-19 tests	No
The number, type, and availability of COVID-19 vaccines	No

⁷⁰ Extracts of data could be downloaded in xls format, but the entire dataset was not available as a single bulk download.

⁷¹ [Open Data Portal of the Republic of Uzbekistan](#)

Data Characteristics	Availability
Dataset is available free of charge	No
Data is available in all the country's official or national languages or the major languages of the country.	No
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No

VACCINATION DATA

Open data on the number of daily and total vaccinations in the Republic of Uzbekistan were provided on a dedicated website⁷² administered by the Ministry of Health of the Republic of Uzbekistan. However, this dataset only included daily data and was not historical or systematic making comparative analysis impossible. Furthermore, the data did not include any information about vaccinated individuals. There was also no information on the type of vaccine and the stage of the vaccine. Therefore, the available data did not fully meet the open data standards.

Indicator	Availability
Geographic distribution of vaccinations	Partial
Age of the vaccinated individuals	No
Sex and/or gender of the vaccinated individuals	No
Disability status of the vaccinated individuals	No
Membership of marginalized populations among the vaccinated individuals	No
Data about vaccination for residents of long-term care facilities	No
Information about vaccination of incarcerated individuals	No

⁷² [Uzbekistan's official Covid-19 information portal](#)

Data Characteristics	Availability
Dataset is available free of charge	Yes
Data is available in all the country's official or national languages or the major languages of the country	Partial ⁷³
Accessible and open official tools are available to help users explore data	No
Data is timely and updated	No
Historical data is available that allows users to track change over time	No
Machine-readable formats	No
In bulk availability	No ⁷⁴

MAJOR STRENGTHS AND WEAKNESSES

Strengths
Healthcare data available on the official Open Data portal
Vaccination Data published on dedicated portal
Well-maintained Open Data Portal

Weaknesses
Lack of Machine readable vaccination data
Lack of disaggregation of Mortality data by age and sex
Lack structured healthcare data

⁷³ Data was only available in the Uzbek language

⁷⁴ Extracts of data could be downloaded in xls format, but the entire dataset was not available as a single bulk download.



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