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Data availability for assessing disruption of essential services for maternal, newborn, child and adolescent health during COVID-19

Lessons learned from Tajikistan

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Background

To quantify the scope of disruption to health services and mitigate the impact of the COVID-19 pandemic on Tajikistan's health system, access to reliable data on hospitalizations and utilization of primary health care services is needed. Obtaining the relevant data in Tajikistan was challenging at the beginning of the pandemic. According to the official government position, the first COVID-19 case was reported on 30 April 2020 and no disruption of services was anticipated.

Although the country has a system in place for routine data collection and is working towards digitalization, it was impossible to access and analyse data meaningfully during the first wave of the pandemic. To understand and address this issue, the Ministry of Health and Social Protection of the Population and WHO worked together to develop and undertake several actions:

- an exploratory assessment of the health information system (HIS) to identify the root causes of the lack of data availability;
- data collection to monitor hospitalization rates in the country; and
- quantification of unnecessary hospitalizations.

Root cause analysis: exploratory HIS assessment

Objective and methods

In September 2021, a WHO team conducted an exploratory HIS assessment in Tajikistan, with the aim of obtaining a rapid overview of the main components of the national HIS and their functioning. WHO's new support tool to strengthen HISs was used as a basis for this preliminary assessment *(1)*. The assessment methodology has been updated to reflect the current HIS context in the WHO European Region: it now achieves a better balance between data collection and actual data use, and better reflects the growing importance of electronic health records and other digital solutions.

For the assessment, the WHO team, with the WHO Country Office in Tajikistan, conducted semi-structured interviews with the main HIS stakeholders. The interviews were guided by and structured according to the core components of the standard HIS assessment item sheet *(1)*:

- data collection (including data sources and data infrastructure, management and resources);
- analysis;
- health reporting;
- knowledge translation; and
- governance and resources.

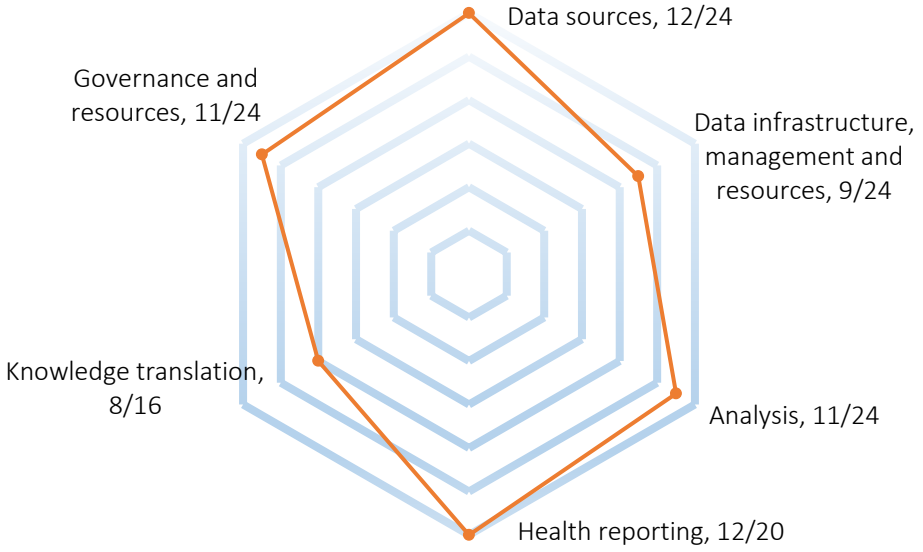
Findings

Although Tajikistan successfully implemented a national electronic database system for aggregated data reporting in 2015, based on District Health Information Software-2 (DHIS-2), data sources and data infrastructure in the country are mainly paper-based. DHIS-2 is mainly available at the central and regional levels, facilitating aggregated data reporting. It is possible to generate statistical reports at different levels using DHIS-2, but capacity to update the reports to meet current requirements is lacking. Capacity to use data for decision-making is also limited. The statistical data generated are only presented in the form of tables or figures, with no interpretation.

Nevertheless, many good examples of different programme-level data collection and reporting improvement initiatives are available – usually supported by international donors. For example, ongoing HIS digitalization and modernization efforts are taking place for tuberculosis, HIV, COVID-19, and maternal, newborn and child health programmes. These include continuing efforts to optimize reporting forms, HIS digitalization and capacity-building.

The results of the core HIS components maturity evaluation (Fig. 1) clearly show that limitations exist in almost all core areas. The summary of the HIS assessment is based on the team's analysis of strengths, weaknesses, opportunities and threats[1].

Fig. 1. HIS maturity evaluation: core components and scores



[1] Detailed findings will be available in the forthcoming report *Strengthening the health information system in Tajikistan*. This report outlines the weaknesses identified that limited data availability.

Key weaknesses identified during the assessment included:

- a lack of necessary financial and non-financial resources;
- staff turnover and poor motivation;
- a focus on data collection rather than analysis;
- no integration into HIS digital developments;
- not all registers that should be in place are available or working;
- no institutions for HIS management and development of health policy;
- no personal identification numbers;
- a lack of analysis of clinical data;
- no permanent HIS quality assurance mechanisms;
- poor data quality and timeliness issues;
- double reporting and inconsistencies;
- unreported deaths and late registration of births in civil registration and vital statistics services;
- reporting not detailed according to International Statistical Classification of Diseases, 10th revision (ICD-10);
- no use of the cause of death analysis tool to assess the accuracy and completeness of mortality and cause of death data by checking for potential errors and inconsistencies;
- mostly paper-based data collection and reporting;
- insufficient public reporting and data availability on the Internet.

All these limitations hamper the functionality of the HIS. This extends beyond maternal, newborn, child and adolescent populations and is reflected in many other areas.

Quantification of health service disruption: monitoring hospitalization rates

Objective and methods

Health information and statistical data are processed only annually in Tajikistan, but real-time data (or at least monthly data) are required to understand changes in health care systems during a pandemic. The numbers of monthly hospitalizations (as an indicator of provision of services) in 2019 and 2020 were collected manually for the whole Tajik population and for subgroups, to assess continuity of hospitalization as an essential health service available for the maternal, newborn, child and adolescent populations.

Hospitalization data among all age groups in the Tajik population, children aged under 18 years, infants (aged 0–1 year), children aged under 5 years, and pregnant women for 10 hospitals were obtained from the Republican Medical Statistics and Information Centre of the Ministry of Health and Social Protection of the Population.

Findings

The manually collected data show a marked reduction in hospitalizations in all the targeted populations (Fig. 2), and especially among children in all age groups (Fig. 2), starting in March 2020. This matches the timings of border closures in Tajikistan and general fear among the population, even though no COVID-19 cases had been reported in the country at that time *(2)*.

The data also show the lowest numbers of hospitalizations – which might well reflect the peak of disruption to health services – in May 2020, corresponding to detections of the first cases in the country and the focus of health services and supplies on containing the COVID-19 pandemic. At this point, the country entered a phase of community spread. Thereafter, the data show a reduced number of hospitalizations – with a slight increase in July, which was sustained through the rest of the year but was far from reaching pre-pandemic levels in all the targeted populations (Fig. 2–6).

Fig. 2. Number of hospitalizations, all age groups, 2019 and 2020

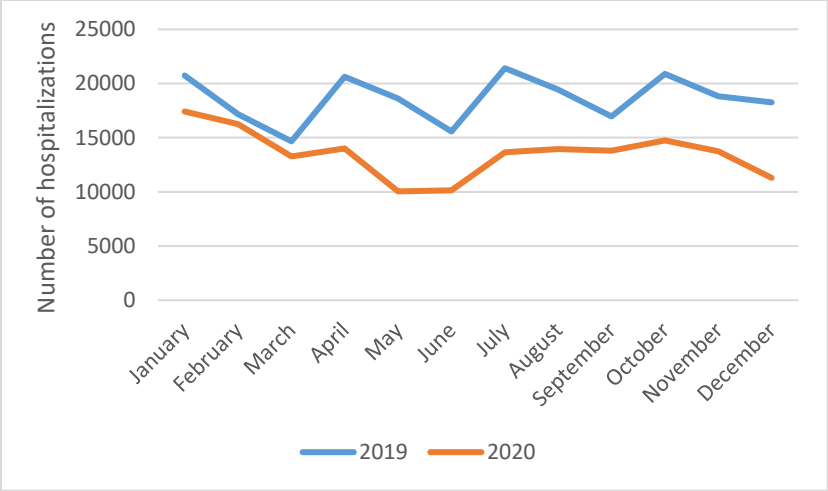


Fig. 3. Number of hospitalizations, children aged 0–17 years, 2019 and 2020

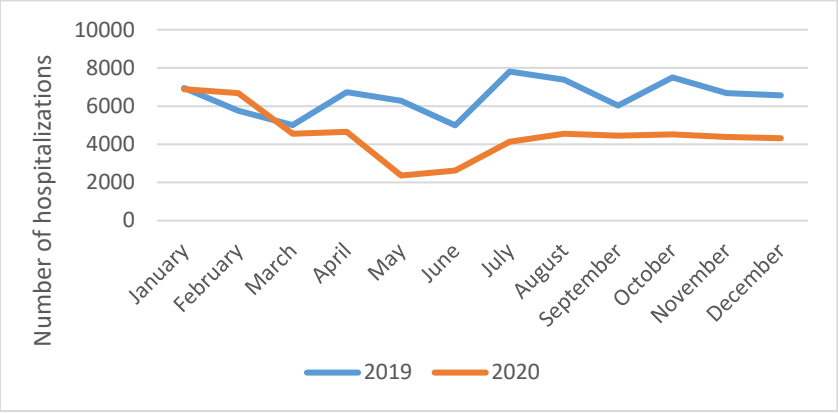


Fig. 4. Number of hospitalizations, infants aged 0–1 year, 2019 and 2020

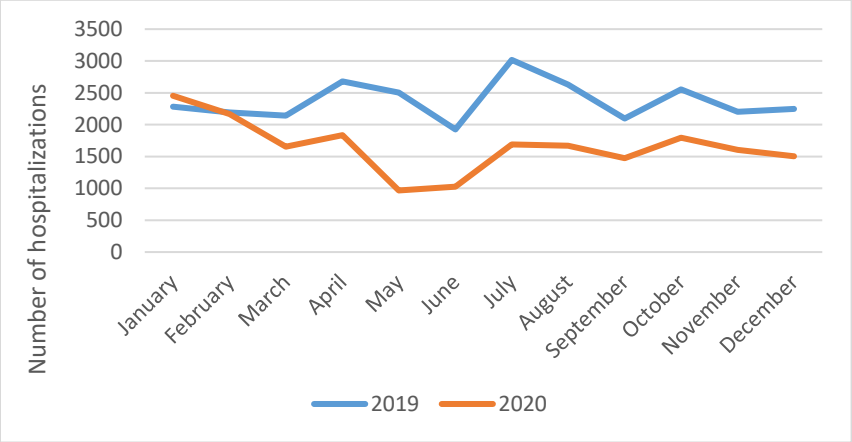


Fig. 5. Number of hospitalizations, children aged 1–4 years, 2019 and 2020

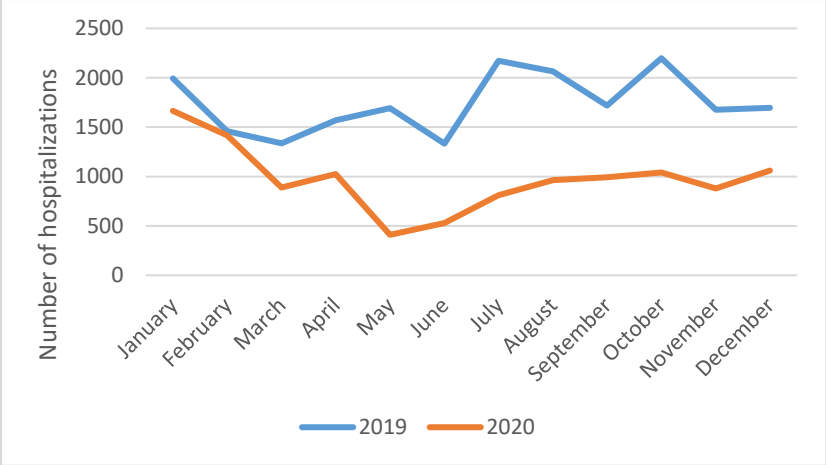
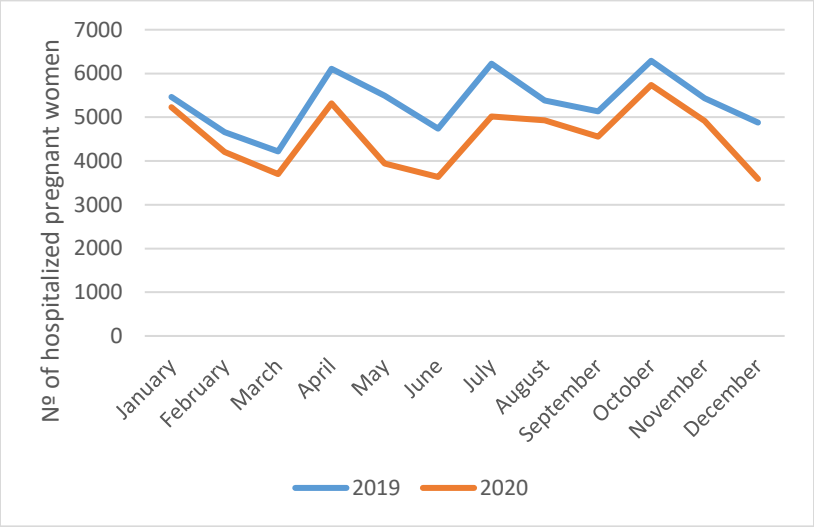


Fig. 6. Number of hospitalizations, pregnant women, 2019 and 2020



The data on monthly hospitalizations in the entire Tajik population and in all the selected groups show a drop between March and May 2020, coinciding with the beginning of the pandemic, lockdown and other restrictive measures. While this could be due to temporary suspensions of services to limit the spread of COVID-19 – combined with mobility restrictions, social distancing and public messages strongly endorsing remaining at home – it could also be due, in part, to a proportion of hospitalizations that were unnecessary *(3).*

Quantification of unnecessary hospitalizations: monitoring improvement to strengthen primary health care

Objective and methods

To understand better the collected data showing the drop in numbers of hospitalizations in Tajikistan in March 2020, unnecessary hospitalizations among children and pregnant women were quantified. These relate to patients who could have been managed entirely within the primary health care (PHC) system. Understanding the proportion of hospitalizations that could be managed at the PHC level – to demonstrate the strength of the PHC network – is crucial for policy-making to improve the PHC system.

A health system evaluation of unnecessary hospitalizations was conducted in September and October 2021 in 15 public hospitals across the country. The methods and findings are detailed in the forthcoming full report *Strengthening primary health care by avoiding unnecessary hospitalizations in Tajikistan: health systems evaluation report*.[2] In brief, three international and national WHO consultants were assigned to conduct the overall data collection. A technical

[2] To be published soon.

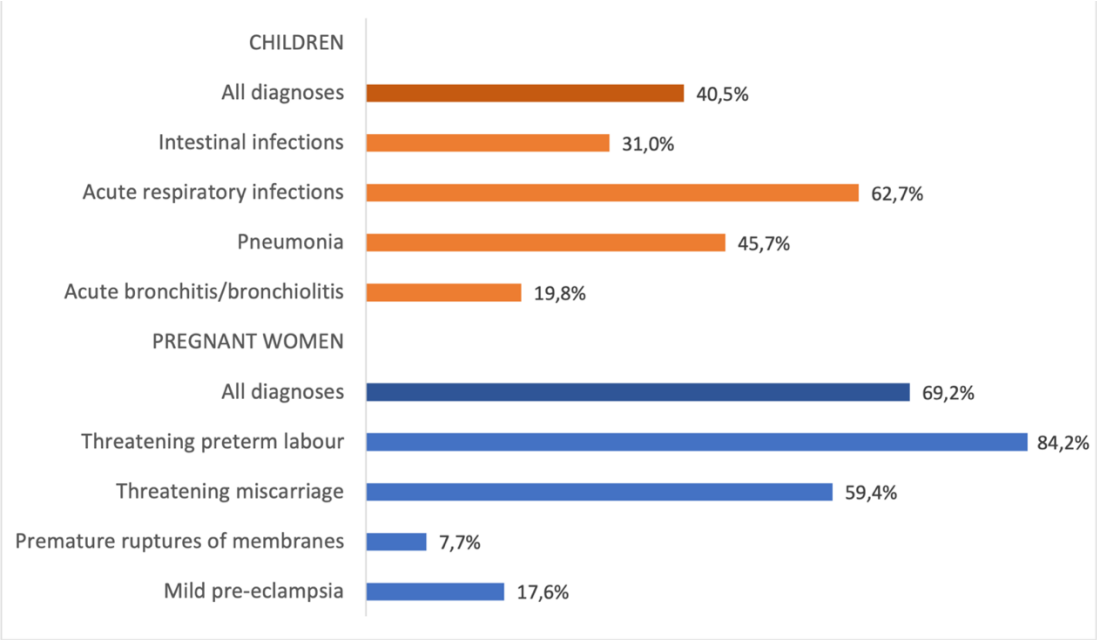
working group was established by the Ministry of Health and Social Protection of the Population to work jointly on this task, comprising three obstetricians, two paediatricians and one expert from the Ministry's Statistics Department. They travelled to the selected hospitals for quantitative data collection and conducted interviews with key informants, including health-care providers, patients and caregivers.

Prior to data collection, a one-day workshop was conducted to train the team on data collection and to finalize hospitalization criteria for each of the selected conditions for pregnant women. Medical records of children aged 2–59 months hospitalized with acute respiratory infections or diarrhoea, and of pregnant women hospitalized for threatening premature labour, threatening miscarriage, premature ruptures of membranes or mild pre-eclampsia were randomly selected and reviewed.

Findings

Among the data collected from the 15 hospitals visited, 40.5% (178/440) of hospitalizations of children and 69.2% (292/422) of hospitalizations of pregnant women were judged unnecessary (Fig. 7).

Fig. 7. Proportion of unnecessary hospitalizations in children and pregnant women, among all diagnoses and by primary diagnoses



All unnecessary hospitalizations were also judged to be unnecessarily prolonged. Among the necessary hospitalizations, 63.0% (160/254) were judged to be unnecessarily prolonged in children and 39.2% (51/130) in pregnant women. Not enough data were available in the medical records to judge whether hospitalizations were unnecessarily prolonged for five children. The proportion of medical records for which it was unclear whether hospitalization was necessary or not because of

missing information was low (1.8% in children; none in pregnant women). This low level of unclear cases reflects good data reporting in the medical records throughout the hospitals visited.

The way forward

Strengthening the HIS

The exploratory HIS assessment carried out in September 2021 showed limitations in many core components, resulting in gaps in data reporting and data-driven decision-making. The team therefore suggests the following actions:

- strengthening government structures to coordinate a strategic scheme to extract, analyse, present and interpret accurate data from the health system for real-time use in decision-making processes;
- establishing use of evidence and data for development of health policies;
- promoting the digital transition and setting deadlines and goals for digitalization of information related to the health system;
- endorsing an open culture regarding use of health information to investigate and tackle weaknesses in the health system;
- expanding on development of a regulatory tool for the development of a national integrated electronic/digital database focused on the needs of the health system;
- including all possible stakeholders in the production and follow-up of evidence-based policy developments.

Strengthening PHC and reducing unnecessary hospitalizations

The health system evaluation of unnecessary hospitalizations conducted in September and October 2021 showed high levels of unnecessary hospitalizations, and of unnecessarily prolonged hospitalizations. The team therefore suggests the following actions:

- strengthening quality of care at the PHC level;
- carrying out a root cause analysis to understand the reasons for unnecessary hospitalizations;
- promoting clear protocols and infrastructure for safe management of outpatients, including children and pregnant women;
- endorsing clear rules and recommendations for reducing unnecessary hospitalizations through adjustment of national regulations and implementation of clear hospitalization protocols/criteria;
- evaluation of financing systems to remove incentives for unnecessary hospitalization, with the aim of creating cost-saving strategies and improving working conditions and salaries for health workers in the country;

- creating awareness among health staff and patients about the implications and impacts of unnecessary hospitalization;
- establishing efficient monitoring schemes and improved data management capabilities to develop real-time decision-making for clinical staff, government administrators, officials and other national and global partners in the health system.

References

1. Support tool to strengthen health information systems: guidance for health information system assessment and strategy development. Copenhagen: WHO Regional Office for Europe; 2021 (https://apps.who.int/iris/handle/10665/342126, accessed 30 March 2022).

2. COVID-19: Tajikistan situation report # 1, 3 April 2020. Dushanbe: United Nations Tajikistan; 2020 (https://reliefweb.int/report/tajikistan/covid-19-tajikistan-situation-report-1-3-april-2020, accessed 30 March 2022).

3. Assessment of sexual, reproductive, maternal, newborn, child and adolescent health in the context of universal health coverage in Tajikistan. Copenhagen: WHO Regional Office for Europe; 2021 (https://apps.who.int/iris/handle/10665/341975, accessed 30 March 2022).

The WHO Regional Office for Europe

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World Health Organization
Regional Office for Europe

UN City, Marmorvej 51,
DK-2100 Copenhagen Ø,
Denmark
Tel.: +45 45 33 70 00
Fax: +45 45 33 70 01
Email: eurocontact@who.int
Website: www.euro.who.int

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