

Appraisal of laboratory system response to COVID-19 and forward planning

Project Overview

Goals and Objectives



The goal

The goal of the intra-action review (IAR) was to assess the Pakistan laboratory system's response to the COVID-19 pandemic and to identify ways to prepare it for future outbreaks in the context of the transition to Integrated Disease Surveillance and Response (IDSR).



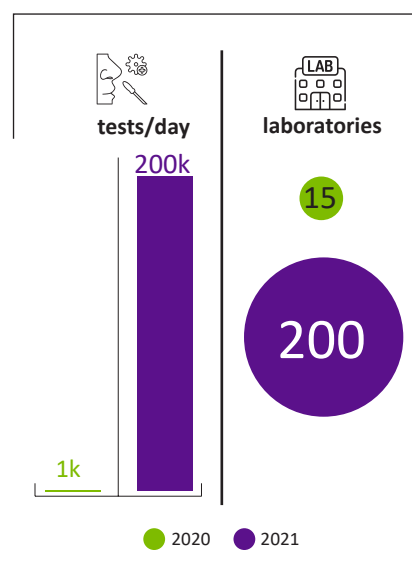
The objectives

- Review how the laboratory surveillance system adapted and responded to the pandemic, with particular attention to coordination, surge planning and specimen referral
- Analyze gaps of the response to formulate an action plan and recommendations for the system's transition to IDSR and mobilization for future outbreaks



Context

The laboratory system in Pakistan represents a successful example of scaling up capacity and performance during the COVID-19 pandemic. From an initial capacity of 1,000 tests/day in 15 laboratories in March 2020, Pakistan's laboratory system now (November 2021) provides 200,000 tests/day at over 200 sites across the country. National and provincial laboratories have also been generating valuable data for COVID-19 surveillance and response, including sequencing data for the identification and tracking of SARS-CoV-2 variants of concern. Maintaining a strong public health laboratory system is a core capacity under the International Health Regulations (IHR) (2005), and is essential in the detection of outbreaks through safe, reliable and timely laboratory testing. COVID-19 has thoroughly measured whether laboratory systems can demonstrate resilience in the face of tremendous demand for quality, safe testing. WHO recommends that Member States use the COVID-19 pandemic as the basis of



an intra-action review (IAR) of one or more IHR (2005) emergency response pillars. These country-led, facilitated discussions allow national stakeholders to reflect on lessons learned and propose actions moving ahead for COVID-19 and other long-term health security issues. Pakistan chose its national laboratory system as the focus of a review.



Approach

With concurrence of the Pakistan Ministry of National Health Services, Regulations and Coordination, the National Institute of Health (NIH) planned an IAR of the laboratory response to the ongoing COVID-19 pandemic on 14 and 15 September 2021. The IAR involved collaboration with provincial departments of health and provincial public health laboratories. National stakeholders

representing 14 institutes and seven provinces joined either on-site at the NIH or virtually. WHO Pakistan and the WHO Office for the Eastern Mediterranean Region organized the review. The Regional Office hosted experts from the consulting company, DATOS, who facilitated the seven-hour workshop following the structure outlined in the WHO IAR guidance document⁽¹⁾.



Approach

The review covered the period from January 2020 to mid-September 2021. Prior to the workshop, the facilitators compiled the national stakeholders' views on successes and challenges in the laboratory system's response to COVID-19. They also asked stakeholders to identify opportunities to strengthen the resilience of the laboratory system against future outbreaks and ways to

incorporate it into Pakistan's imminent implementation of the Integrated Disease Surveillance and Response (IDSR) system. During the workshop, participants conducted and refined a groupwise Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, performed gap and root cause analyses, and formulated recommendations for bridging the gaps.



Results

The IAR confirmed that COVID-19 had a positive impact on the laboratory system in Pakistan as the country has expanded the network of testing laboratories and provided opportunities for capacity building through trainings and onsite visits. Data flowed quickly to the central government. Funding and staff numbers increased. Equipment and supplies were more easily available. At the same time, it revealed that the system's needs remain great; among them:

- **Quality processes**, such as staff (re)-training and assessment, and equipment and reagent controls
- **Information fragmentation issues**, such as a multiplicity of data collection and entry systems, and persistence of manual reporting
- **Coordination** between the laboratory system and its closest partners (surveillance, clinical and procurement teams)

- **Human resource and supply chain elements**, such as surge planning and procurement, which are in need of development

National stakeholders formulated 23 recommendations to improve the current response to COVID-19, increase preparedness for the next outbreak, and facilitate the transition to IDSR. These covered points related to regulations, general emergency response planning, the laboratory network, the surveillance system, data management, and communication. The laboratory system will play a central role in Pakistan's transition to IDSR. However, laboratory surveillance will have to be sustainable and well-integrated with epidemiological services. The two entities need to coordinate actively, starting with closing data-sharing gaps between the private sector and provinces with the national health information management system.



Lessons learned

The laboratory system has mobilized a robust response to COVID-19. However, the positive effects could be transitory unless sufficient action is taken to ensure their sustainability. Almost 80% of the recommendations developed by the stakeholders were already part of the Pakistan National Laboratory Policy developed in 2017. This signifies that the general measures suggested for a national policy could be applicable to emergency situations.

It also means that there is already a framework for strengthening the laboratory system for COVID-19 and future outbreaks. The IAR was aimed at the evaluation of the response of the laboratory system. However, the system does not operate alone, and stakeholders' recommendations called for action in other areas (e.g., government, surveillance, clinics, points of entry) to ensure its optimal function.



Recommendations

Stakeholder recommendations were aggregated in six major points:

- 1 Regulatory bodies:**
Ensure that each province has a strong, proactive regulatory body (Health Care Commission) that specifically focuses on putting laboratory-related regulations in place, taking national laboratory quality standards into consideration.
- 2 Emergency outbreak response planning:**
Develop, test, and regularly update an all-hazards National Emergency Response Plan (including for infectious disease outbreaks), that lays out clear terms of reference for actors, uniform response guidelines for provinces, a system for needs monitoring and forecasting, a financial plan, and a system for timely communication between all stakeholders.
- 3 Laboratory network:**
Expand the laboratory network for better population coverage, making use of open, flexible testing platforms, and support it with a system of long term inter-provincial mentoring and a mechanism of regular communication between laboratory directors for exchange of information and experience.
- 4 Surveillance system:**
Contribute actively to the national plans towards a routine, robust, integrated disease surveillance and response system at government level. This system should be flexible enough to integrate emerging threats, sustained even in health emergencies, and should include a mechanism of strong coordination with laboratory services.
- 5 Data management:**
Ensure that priority disease testing data from public and private sector laboratories are accessible (with appropriate security) at central and provincial levels, and integrated with surveillance platforms for evidence-based public health management.
- 6 Communication and mutual support:**
Develop communication mechanisms that provide timely information to emergency management teams, allow interprovincial coordination, and effectively use the cellular network and media for public awareness, surveillance (contact tracing), and other public health efforts.



World Health Organization

REGIONAL OFFICE FOR THE Eastern Mediterranean

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