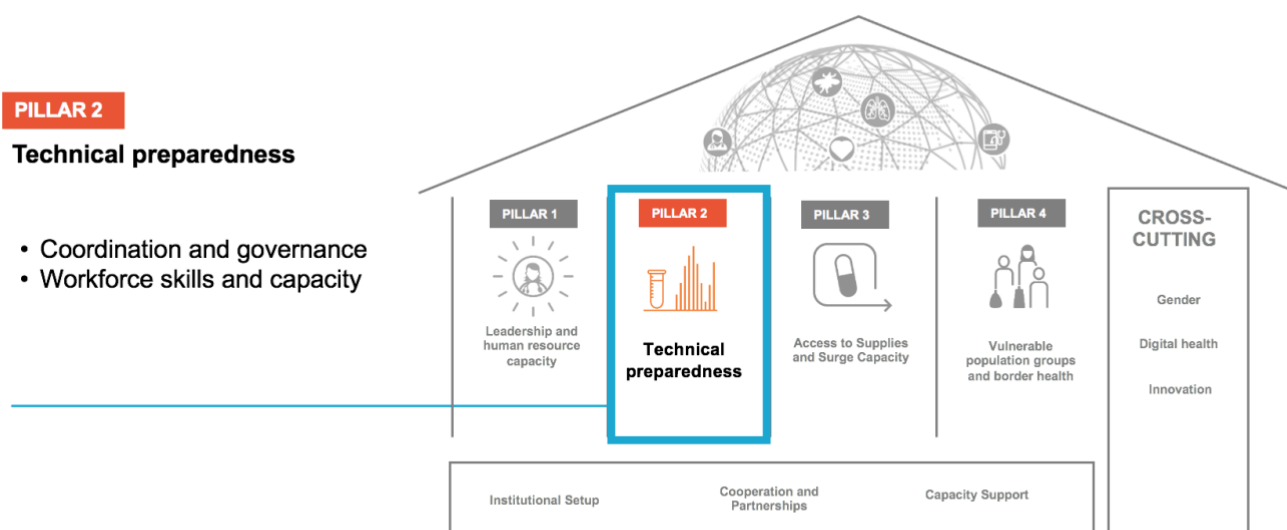


## Pillar 2: Technical Preparedness

### PILLAR 2

#### Technical preparedness

- Coordination and governance
- Workforce skills and capacity



**Key challenges.** There is a need to improve coordinated response through regional alignment in the planning and implementation of measures in response to public health threats including the current COVID-19 pandemic. During emergencies, existing national public health surveillance systems may be underperforming, disrupted or non-existent, become overwhelmed without an early warning system to detect and react rapidly to suspected disease outbreaks. Evidence from national data shows vast differences in how many tests are conducted per 100,000 people across CAREC member countries, as well as vast differences in national capacity for Polymerase Chain Reaction (PCR) testing and ability to keep surveillance testing capacity in line with escalating pandemic developments. National results from PCR testing show how the daily rate of positive tests run high, up to and above 20-30% in episodes during the past years in several CAREC countries.<sup>1</sup> When the daily rate of positive tests increases, this shows that the reported number of confirmed cases only represents a minor proportion of the total number infected, and consequently, there is a need to expand testing. WHO recommends testing volumes to be expanded, so daily rates of positive tests will not exceed 5%.

Given the high rate of positive PCR tests, only a small portion of infected are caught by the surveillance sampling and testing. That leaves a huge proportion of the pandemic un-detected. This makes calculations of needed health care resources impossible from surveillance data. Differences in proportion of infections detected and several other complications due to significant inter- and intra-country differences in surveillance sampling, principles for selection of cases to test and choice of methods for analysis, make comparisons of epidemiological statistics between CAREC countries difficult. Therefore, a data- and facts-driven coordinated action to control, mitigate and contain the pandemic becomes very hard to formulate across the CAREC countries.

1 Our World In Data. Accessed 21 September 2021. [ourworldindata.org](https://ourworldindata.org)

A regionally synchronized planning and operation of surveillance, using the same methods for sampling and analysis would thus be very helpful to enable a regional “joint grip” on the extent of the COVID-19 challenge. Such a joint regional approach with comparable data from countries, would help to guide decision makers choose approaches to reduce risk for further spread of the disease. Cross-country access to and sharing of quality data is a critical prerequisite for guiding a coordinated response; this requires the development of proper data sharing platforms and data visualization tools as well as supporting the respective capacity building efforts.

Sufficient laboratory infrastructure is a critical element of enhanced surveillance and overall health systems capacity, particularly during pandemic threats. The COVID-19 pan-demic revealed the need for a surge capacity plan by establishing decentralized testing capacity in subnational laboratories under the supervision of the national reference laboratory, if available.<sup>2</sup> This is illustrated by WHO-recommended goal to meet increasing epidemic spread by increasing the number of sampling and testing to keep the daily positive test rates below 2%. Using experience and statistical data from CAREC countries from the past year, planning for better surge capacity preparedness can be achieved.

Results of the national assessments conducted in CAREC countries revealed critical gaps in different components of laboratory quality management system (LQMS) such as quality control and assurance measures of national laboratory networks, insufficient specimen transportation and referral, lack of integration of and interoperability between the health and laboratory information systems, amongst other. All the components of the LQMS including biosafety and biosecurity, equipment maintenance, quality control, quality assurance, external quality assurance, supply chain management with a specimen transportation system, information management, personnel management, and professional development must be functioning well to ensure that country’s laboratory system is able to effectively respond to public health threats and emergencies. In addition, the pre-analytical part of laboratory testing, such as sample collection, training of personnel involved in sample collection, even when not performed by the laboratory need to be considered.

**Proposed actions.** Pillar 2 will focus on improving *technical preparedness* in the region. Areas of intervention may include the following:

- (i) improve sharing of epidemic information according to IHR and in line with laws and regulations in respective CAREC member countries.
- (ii) Strengthen national and regional laboratory networks and laboratory systems<sup>3</sup> for testing (as well as multi-functional equipment and methods for detecting potential pathogens, e.g., boosting PCR capacity and next generation sequencing capacity, explore to establish a Central Asian Regional Centre for Epidemiology, Virology and Bacteriology<sup>4</sup>).
- (iii) Exchange strategies of sampling to enable cross-country comparisons, improve capacity for referral transport of specimens and reduce turn-around time from sampling to result report, and capacity boosting for sensitivity, reliability through quality assurance and upgraded biosafety standards.
- (iv) Improve laboratory infrastructure, ensuring proper laboratory workflow and management according to international quality and biosafety requirements, including through existing regional initiatives and hubs.
- (v) Support Quality Management System (QMS) implementation in laboratories through mentoring through trained national mentors.

A full document of draft CAREC 2030 Health Strategy is available at <https://www.carecprogram.org/uploads/MC-2021-CAREC-Health-Strategy-2030-20211711-EN.pdf>

2 World Health Organization. 2020. [Laboratory testing strategy recommendations for COVID-19.](#)

3 A network is the physical number of labs and their served catchment areas, served facilities or served populations. Lab systems includes functionalities of reporting, quality assurance and quality control mechanisms.

4 Turkmenistan Golden Age news. 2021 [Central Asian Regional Center for Epidemiology, Virology and Bacteriology](#)