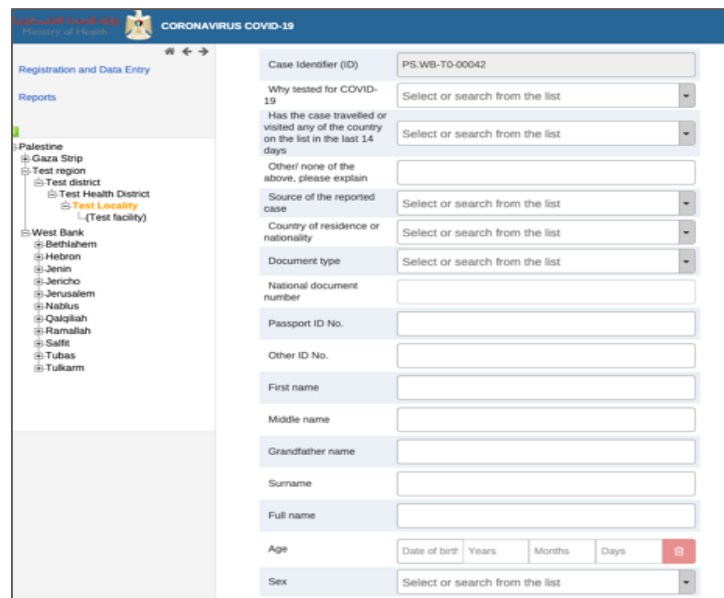


Tracking COVID-19: Palestine's Leadership in Developing Electronic Health Registries

The Palestinian National Institute of Public Health (PNIPH) is a project led by the World Health Organization (WHO) in close cooperation with the Palestinian Ministry of Health (MoH) and the Norwegian Institute of Public Health (NIPH). The main aim of PNIPH is to provide evidence-based public health knowledge to support policy formulation, and to bolster national efforts to protect and improve the health of the Palestinian people.

One of PNIPH's core objectives is to develop and improve electronic health registries as effective tools to support evidence-based decision making related to public health. Using the DHIS2¹ platform, the MoH and PNIPH teams have gained extensive experience in implementing e-Registries in a number of areas, such as mother and child health, mammography, and case-based surveillance, among others, in an effort to move towards a unified primary health care system. Since 2017, PNIPH has invested heavily in the establishment of a Palestinian Country Team with members from both PNIPH and the MoH to build local capacity in DHIS2. The team is now able to configure, customize, and build health systems based on DHIS2 technology in response to local health needs, without external support.



Registration and data entry page, Palestinian COVID-19 surveillance system

This capacity was recently tested with the outbreak of the COVID-19 virus in Palestine. Recognizing the urgency of the situation, the team quickly took action, and within a week, successfully developed the COVID-19 surveillance package. Building on the existing work of the global DHIS2 community, the Palestinian team built and customized the system to incorporate both MoH and WHO needs for tracking information at the patient level, and created dashboards with country-specific indicators.

The surveillance system will be used by MoH health workers to input important data related to reported cases of COVID-19 throughout the country in order to track the treatment of patients. The system adopted WHO-recommended COVID-19 case definitions, as well as MoH and WHO case reporting information, including:

- Socio-demographic information
- Occupation and animal contact
- Source and method of infection
- Clinical course and pictures, including signs and symptoms
- Co-morbidity and underlying health conditions
- Exposure and travel information prior to the onset of symptoms
- Lab test results

¹ District Health Information Software 2 (DHIS2) is an open source, web-based health management information system (HMIS) platform. Today, DHIS2 is the world's largest HMIS platform, in use by 67 low and middle-income countries. DHIS2 has released a digital data package to accelerate case detection, situation reporting, active surveillance and response for COVID-19. The package was initially inspired by Sri Lanka's pioneering design of DHIS2 tracker for COVID-19 case detection and draws on years of collaboration with the World Health Organization (WHO) to develop information system standards for case-based disease surveillance.

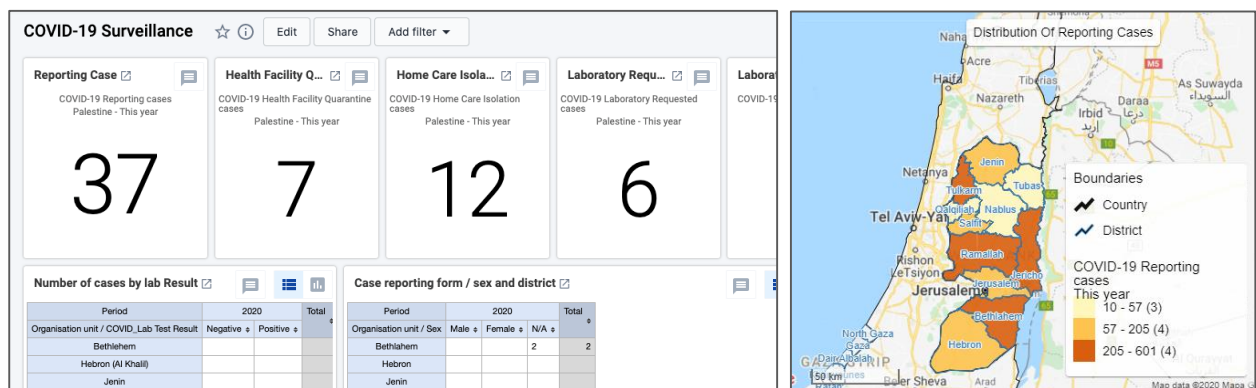
- Health outcomes

The system was built to address four case management criteria:

- Reporting for suspected COVID-19 cases
- Cases of home and institutional quarantine (monitoring of health status for 14 days)
- Hospital isolation cases
- Confirmed case reports

PNIPH is in the process of training focal points in each district to use the system, which will be launched in mid-April. Data will be collected through these focal points who are responsible for following up on and documenting suspected cases, as well as monitoring cases in quarantine. The Minister of Health and the Prime Minister will also have access to the system.

The software is able to provide real-time analyses and generate needed statistics and indicators required for follow-up and monitoring the containment or spread of the outbreak. Statistics generated by the system will illustrate the characteristics and classification of cases, whether confirmed or suspected, as well as health outcomes (recovered, stable, or deceased), in addition to other WHO and health system indicators. Over 70 indicators are generated by the system and are presented in the dashboard as tables, graphs, and GIS maps. This information will support decision-making regarding preventive and corrective procedures.



Example dashboard from the Palestine COVID-19 surveillance system (not actual data)

The Minister of Health commended the country team's swift response to the pandemic and the effectiveness of having both a country team and local expertise in building health systems. These efforts have demonstrated PNIPH's leadership in pioneering digital health information in the country and the greater region, as well as the Institute's ability to quickly respond to urgent and emergency health sector needs.

As the COVID-19 situation in the country is still ongoing and largely uncertain, PNIPH will continue to adjust the system to benefit the health sector and support the government in its efforts to address the crisis. Additionally, the Palestinian Country team plans to share its experience with the global community by providing guidance on developing customized systems, meta-data, indicators, and online virtual training videos.

For more information about PNIPH, please visit <http://www.pniph.org> | <http://fb.com/pniph1>

