BACKGROUND

The COVID-19 pandemic threatens to undermine Indonesia’s recent development gains. Understanding the direct and indirect effects of the pandemic on child well-being is essential to developing a comprehensive response, and requires timely data. At the same time, physical distancing restrictions have made it difficult to conduct facility and population-based assessments.

Innovations in real-time data collection and visualization, complemented by big-data analytics and artificial intelligence, provide an alternate approach that is safe, rapid and comprehensive. In collaboration with UNICEF’s Innovation Team in New York and with the support of our Regional Technology-for-Development office in Bangkok, UNICEF Indonesia has been supporting the government’s COVID-19 response through a range of cutting-edge data platforms and partnerships. These are outlined briefly below.

MOBILITY INSIGHTS

Using big data, a dashboard was built to understand how many people are adhering to the appeal to stay-at-home. Daily data from 150 thousand Cuebiq users, and 140 million Facebook users are used and analysed. Furthermore, the data was split by poverty level to see the correlation between economic background and the ability to stay at home. This helped informed decision-making regarding implementation of physical distancing measures. The dashboard has been replicated in a number of other countries globally with support from UNICEF.

COVID-19 IMMUNIZATION

UNICEF, at the request of the Government of Indonesia, supports the design and rollout of a registration and monitoring platform for COVID-19 immunization. This will leverage existing ministry datasets on front-line workers and a national database from the health insurance agency (BPJS). UNICEF supports the design and implementation of real-time data systems to track and visualize beneficiary registration, user experience, and vaccination coverage.

NUTRITION CHATBOT

The COVID-19 pandemic has disrupted treatment services for severely wasted children. Parents and caregivers cannot bring their children to health facilities for weekly visits and counseling. UNICEF in partnership with the government has designed, implemented and monitored a digital counseling platform (Chatbot) to support health workers and caregivers of children with severe wasting.

The platform was developed using a RapidPro. The chatbot allows information to be shared in different formats, such as pictures, videos, and audio messages, to support parents with low literacy skills.

POVERTY ANALYSIS

Combining machine learning and satellite data, UNICEF built a prototype model to predict poverty in Indonesia at a granular level. The model uses visual information from high resolution satellite imagery, such as roof material, housing density, building height, compound size, nighttime light intensity to estimate poverty. Future collaboration with the Indonesian National Statistics Office and sourcing of higher resolution satellite data will enable increasingly accurate forecasts of poverty in Indonesia.

All dashboard images are for illustration purposes only, they are in the original language and do not reflect latest available data.

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SAFE BEHAVIOUR MONITORING (3M)

Empowering the community, the 3M dashboard provides a way for community members to monitor and report public adherence to 3M behaviors (mask usage, handwashing with soap, and physical distancing). Using RapidPro, a SMS and WhatsApp-based platform, communities can report their observations of 3M behaviors in public places by answering simple questions.

SCHOOL CONNECTIVITY

In order to better understand the distribution of digital access among Indonesian students, a mapping of Indonesian school locations and internet connectivity helped produce an index of school connectivity. The index shows in which areas students are likely to have reliable and fast internet connectivity. This information helps inform decisions on school re-opening and support for schools with low connectivity.

REALTIME FEEDBACK ON DISTANCE LEARNING

Mobile RapidPro surveys were conducted to obtain feedback from teachers, parents and students on remote learning experiences. More than 500,000 schools across the country had to close their doors and switch to remote learning methods. Although more than 90 per cent of students learn from home, only 50 per cent of students learn from home 2-4 times a week, with an average length of 1-2 hours spent on studies on these days. The findings have been used by the Government to optimize distance learning and multisectoral collaboration to close the digital divide.

HOSPITAL CAPACITY

In close partnership with the Ministry of Health, UNICEF developed a monitoring dashboard of hospitals’ capacity throughout the country. This was the first national system that includes every hospital in Indonesia. The information provided by the dashboard helps to monitor real-time hospital capacity at sub-national level and supports the government to respond rapidly to needs for more beds and personal protective equipment.

COVID-19 VACCINE READINESS ASSESSMENT

In collaboration with the Ministry of Health and WHO, UNICEF supports the digitization and online visualization of the COVID-19 Vaccine Introduction Readiness Assessment Tool (VIRAT). VIRAT enables national authorities to plan and monitor readiness of local health facilities for the distribution of COVID-19 vaccines.