

COVID-19 information note 6

Responding to COVID-19 in real time: making data useful for public health

Since the start of the outbreak of coronavirus disease-19 (COVID-19) in Somalia in March 2020, responding to the community spread of the disease throughout the country has required innovative thinking. Given the remoteness and inaccessibility of many parts of the country and vulnerability of the health systems, traditional ways of managing surveillance data and response functions were inadequate, and there was a pressing need for WHO, and other agencies at the forefront of managing this epidemic, to track the spread of the disease in real time, follow its progression and understand its associated risks.

Feasibility study: electronic tools for outbreak and response analysis

Based on the experience and lessons learnt in responding to other major public health crises in Somalia and elsewhere, there was an urgent need to consistently collect good-quality data from the field and to analyse these data regularly to better understand the evolution of the COVID-19 outbreak. The WHO country office also has substantial experience in managing the only surveillance platform in the country – the Early Warning, Alert and Response Network (EWARN) – as well as cholera outbreaks using mobile applications and other affordable digital technology. Building on these experiences, as the outbreak progressed, the

WHO country office recognized the need to quickly identify the means of and challenges to collecting good-quality epidemiological data for epidemic risk assessment and modelling, response analysis, etc.

In that regard, through a consultative process with the federal and state ministries of health, the country office identified the areas that needed to be strengthened and examined the feasibility of digitizing the data. The barriers to using digital tools in remote areas, which are mostly insecure and have unreliable internet connection, were also evaluated. As a result, a number of electronic tools were developed by the WHO country office to assist the federal and state ministries of health to collect and analyse data from the field. These tools are continuously being reviewed and updated as the needs change.

Online tools: organizing data for decision-making and epidemic intelligence

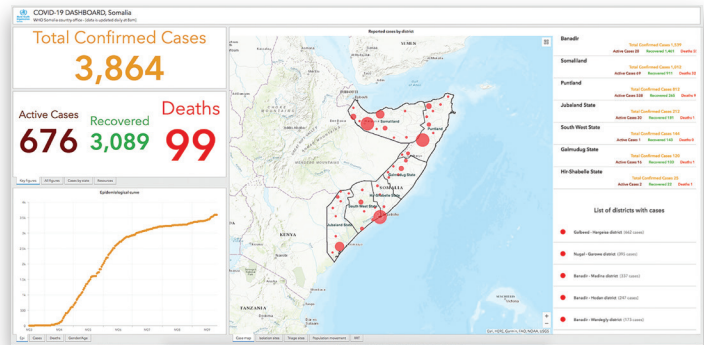
The electronic tools developed by the country office to help with data collection use Open Data Kit technology. These tools are a vital part of the response efforts to tackle COVID-19. They have been used for case finding, contact tracing, follow-up visits and reporting alerts. They have helped the surveillance team gather data from the community during house-to-house visits and during active surveillance for COVID-19 across the country.

In particular, six applications have been used extensively in past 6 months and continue to be used.

1. EWARN software. The system is an open-source web-based application for detection and management of acute public health events; the system was already functioning in the country before the COVID-19 epidemic. At the start of the COVID-19 outbreak in Somalia, EWARN was configured



for data collection and reporting of COVID-19 cases to help track the spread of the disease. There was already a mobile app for EWARN on Android platforms to facilitate data entry and data visualization from remote areas. The mobile app works as an offline application and can use cellular data packages in remote settings in the field. The system generates automatic alerts whenever a suspected case or cluster of cases of COVID-19 are detected by the system. Once the alerts are verified by field investigation, the system captures the information in real time. The case-based data generated from EWARN and other alerts are downloaded to the main data portal of COVID-19.



2. Outbreak toolkit combined with R packages. These are used for advanced outbreak analytics, such as calculation of the reproduction number, doubling time and growth rate. The application was developed in accordance with WHO's global surveillance guidelines for COVID-19. The use of this application for the rapid analysis of the outbreak trajectory, which has been conducted by the WHO country office every 2 weeks since the first COVID-19 case was detected in Somalia, helped to monitor the outbreak situation, the intensity of the virus spread and the transmission patterns at both national and subnational levels. These analyses facilitated evidence-based decisions-making on the response and provided the ministries of health with real-time analysis of the evolution of the outbreak.

3. COVID-19 dashboard. This is an online geographic information system built on Esri and Microsoft Power BI platform. It is used for situation updates, decision-making and timely tracking of the outbreak. The dashboard was launched on 25 April 2020 and is updated daily, allowing visualization of up-to-date epidemiological information, including, for example, location of isolation centres and rapid response teams. On average more than 150 viewers access the dashboard every day (<https://bmgf.maps.arcgis.com/apps/opsdashboard/index.html#/d0d9a939c5fa401caa3a7447e72b2017>).

4. Web-based data collection platform. This platform is a web-based interface built on the Android operating system but can be used by smart devices operating on any system (e.g. iOS, Blackberry, Windows) as the platform uses the technology of Open Data Kit, an open-source software. The platform is used to collect

data from over 918 rapid response teams deployed at the community level in 51 districts and 17 regions. The rapid response teams use mobile devices to collect and transmit data which can be in the form of text or multimedia (photographs, video, audio, barcodes as well as text). The platform supports geolocation to identify the site of any suspected case or cluster of cases of COVID-19. The data collected through Open Data Kit from the field on suspected cases are submitted to a dedicated server which allows WHO to generate a line list of suspected cases in a standardized and consistent format. These data are used for decision-making by the WHO country office and the Ministry of Health who are able to access the information through a secure, password-protected interface. The information is shared offline with humanitarian agencies and the Health Cluster through the dashboard, weekly situation reports and other information products.

5. WhatsApp Chatbot and Facebook messenger. These are automated and interactive public health communication tools developed by WHO headquarters for use on social media. Using these platforms, WHO has been communicating with the general public and media to provide science-based information on COVID-19 in the Somali language, and to correct misinformation, counter myths and relieve fears about COVID-19. About 25 000 users are actively using these message services.

6. Digitization of patients' hospital data. The case reports of patients with severe COVID-19 admitted to hospitals and isolation centres across the country have been digitized. This has allowed hospital authorities to archive all a patient's information, including treatment given, date and time of treatment, prognosis and clinical outcome, in digital format. As the information is hosted on an online portal, health care workers managing patients in these hospitals across the country can access the information (using log-in credentials) and review patient records to understand clinical characteristics of patients, clinical outcome and the usefulness of interventions using different drugs. The portal has a dashboard which gives the user an overview of patients admitted to different isolation centres at any time interval, their clinical outcomes and prognoses. These data allowed the WHO country office to undertake a survival analysis of 131 patients admitted to the main hospital in the country.



Information for action: digitizing the way

The information generated by these online and off-line tools has been used over the past 6 months to generate weekly situation reports and other information and communication products that have been shared regularly with donors and partners. The use of these tools to inform real-time decision-making based on outbreak analysis has been central to the work of the WHO country office in Somalia. This transformation and digitization of surveillance and other outbreak data has helped provide a better understanding of the situation through analyses of these data and allowed specific public health actions to be taken to slow the spread of the virus.

Building back better and stronger: transforming public health

Data are central to public health, especially for decisions-making. The introduction of these electronic tools for collection and analysis of outbreak data analysis has helped the WHO country office and the ministries of health to improve data management capability and present data in a way that can guide decisions-making during the course of the ongoing epidemic. Such tools can also be used and rapidly scaled up in the event of any future health threats and local outbreaks for effective and timely data management. Investment will need to be made to build and sustain strong national and subnational capabilities to manage these electronic surveillance tools which are for the public good of the country. The experience of the past 6

months has shown that digital public health can transform the epidemic response and make detection of health threats quicker and more efficient.

The imperative to save lives in the COVID-19 pandemic will hopefully accelerate progress in expanding digital public health even in resource-limited settings.

World Health Organization's Health Alert on WhatsApp +41798931892 (In Somali language)

WHO has launched a WhatsApp chatbot to provide people with info about the coronavirus in Somali language

Start by clicking WHO Health Alert, then simply text the word **HI** in a WhatsApp message to get started. The service responds to a series of prompts and will be updated daily with the latest information in Somali language.

Just Say **HI**

reply with preferred language (Somali)

You can also visit the WhatsApp Coronavirus Information Hub at <https://www.whatsapp.com/channel/who/coronavirus>, and click on the WHO link.

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Facebook Messenger Health alert

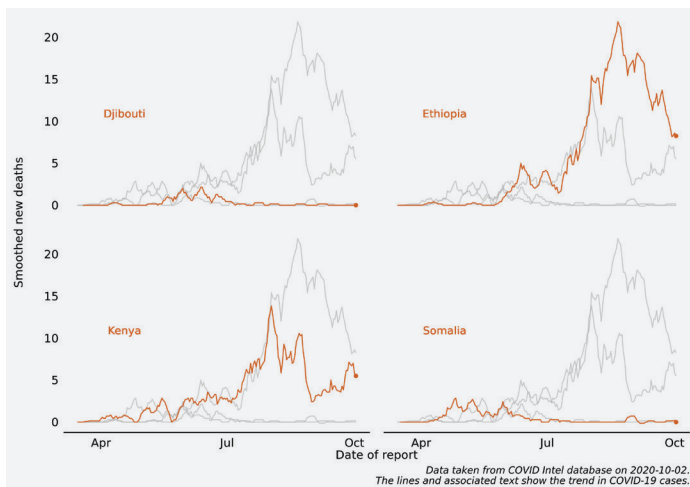
<https://www.facebook.com/Modern-Covid-Shield-107537970886945/>

The instructions are as follows:

- Follow the Facebook link above
- Select the "send message" button at top right if the chatbot does not start automatically
- The main menu should offer the language choice and you'll have to input one of the numbers below associated with the language you'd like to review:
 - 2 - Swahili
 - 3 - Somali
 - 4 - Bengali
 - 5 - Urdu

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Our world, our home. Together, we will defeat our common enemy #COVID19



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