Stop TB Partnership

# INFORMATION NOTE: DIGITAL HEALTH TECHNOLOGIES, VIRTUAL CARE AND COMMUNITY-BASED MONITORING SOLUTIONS FOR TB PROGRAMMES

## DURING THE COVID-19 PANDEMIC AND BEYOND

As the COVID-19 pandemic spreads globally, more countries are putting in place containment and mitigation strategies to stop the transmission of the virus and to ease the burden on health systems. The disruption in routine health services and the need for social distancing will make it particularly challenging for TB programmes to carry out routine operations and to provide the necessary care for people and communities affected by TB. As such, TB programmes will have to rely on alternative options, such as digital health technologies, including virtual care and community-monitoring solutions, to rapidly bring required TB services to the people and communities affected by TB.

The below tables provide a list of available technologies for TB programmes to consider across the care model. While this list is not exhaustive, and there are many digital and virtual care solutions to support TB programme services, national TB programmes will need to identify and select the appropriate technologies that are compatible with their existing information and communications technology (ICT) systems, and that can be rapidly scaled-up to address any potential delays and interruptions caused by the COVID-19 pandemic. For a more detailed list of available digital and virtual care solutions, please refer to the Reimagining TB Care website.

### Information Communication Technology Considerations

Data storage solutions and country regulations

For many digital and virtual care solutions that collect data, TB programmes will need to consider their data storage capabilities. Many countries restrict the use of cloud-based servers for data storage. However, in this unprecedented time these regulations may need to be reconsidered. Many digital health technologies offer safe and secure cloud-based data options that allow for the rapid implementation of these tools. For example the United States, in response to the COVID-19 emergency and the subsequent need to rapidly scale-up tele-care/tele-health platforms, has allowed for the use of non-HIPAA complaint solutions to allow healthcare services to be provided without direct contact between providers and patients. For more information about this decision, please refer to the U.S. Department of Health and Human Services.

Whichever solutions TB programmes consider, efforts to protect confidential information and encryption of personal data remain important and more attention should be paid to the removal of non-essential identifiers before storage.

Access to equipment

TB programmes may need to ensure that their essential staff and affected people have access to phones, tablets or computers, as well as internet or cellular connections.

Funding

To implement or to expand the use of these tools, TB programmes might need to re-programme or re-purpose funds. The Global Fund has issued a statement strongly encouraging countries to consider and take prompt action to mitigate the potential negative consequences of COVID-19 on existing programmes and has provided guidance on the use of funds for this purpose.

## Digital Technologies for Different TB Programme Operations and Services

### 1. Programme Management

To maintain operations, TB programmes should continue to engage staff and conduct meetings and trainings virtually with the use of any of the existing tools listed in the below table. Many tools offer free basic services with a limit on either time or number of participants, but upgrades can be purchased to increase capacity and interactivity.

To continue to keep staff updated on best practices and new information, programmes should provide eLearning opportunities. Many of the platforms listed below can be used to conduct webinars and host interactive trainings. Other platforms exist to build and host interactive, online self-study trainings.

### 2. Case Detection and Diagnosis

Many mobile apps exist for case-finding, contact management, and notification. Some are available commercially, open-source, or locally developed (e.g. DHIS2 tracker; Prevent TB, Nikshay, and Wi-Fi). Programmes should expand the use of these tools to allow for the continuation of notifications, mapping and management of cases and contacts.

Screening Tools

The use of teleradiology and artificial intelligence (AI) for chest x-ray readings can be beneficial, as some health facilities may become overburdened and clinicians and radiologists may be shifted towards COVID-19 response. The use of these tools allows for remote and computer-aided chest-ray readings to help aid in diagnosis. This technology could also become essential if the disease strikes healthcare personnel, leaving some healthcare settings with no alternative to reading x-rays.

Laboratory Connected Diagnostics

Laboratory connected diagnostics transmit diagnostic test results directly from a diagnostic device (such as a Cepheid's GeneXpert) and collect it on a centralized server. By doing so they

offer the possibility of reducing result turnaround time, improving linkage to care and also tracking proper functioning of a diagnostic device and the diagnostic network. Third-party diagnostic connectivity software such as SystemOne's GxAlert/Aspect and Savics' DataToCare include functionalities such as remote monitoring of instrument performance and stock levels, as well the ability to send test results to clinicians and electronic patient registers including notifications to patients to alert them that their results are ready. Effective use of these solutions can reduce the number of on-site visits required for clinicians and patients to get test results as well as the number of supervisory visits required to ensure proper functioning of instruments.

Countries that have already invested in the setup and hardware required to run the software should ensure that testing sites are using all applications, and that enough funding is available to cover all required data transfer costs.

### 3. Care and Treatment of Persons with TB

To ensure continuity of care for persons with TB, TB programmes should consider shifting facility-based care to home-based care options, using telemedicine and digital adherence technologies (DATs). Telemedicine allows for health care providers to remotely stay in touch with their patients and to assess their treatment needs. In case supporting infrastructure is available, such as mobile telephones (internet), many of the same tools used for virtual meetings can also be used to maintain contact with patients. Telemedicine and digital adherence technologies have the advantage of being able to collect and use data, facilitating programmes and patient monitoring and support. Many countries have already started incorporating DATs to help support persons with TB or TB infection with their treatment. These tools allow for the remote support, management, and monitoring of treatment adherence. When implementing any of these options, programmes should consider giving persons with TB at least one month's supply of their treatment drugs that they can take at home to limit the need for face-to-face interactions.

For more information, training materials and step-by-step implementation approaches for digital adherence technologies, please refer to KNCV Tuberculosis Foundation's DAT implementation toolkit via http://www.adherence.tech.

### 4. Community-based Monitoring of the TB Response and other Community Engagement Tools

Community engagement in monitoring the TB response remains even more critical during the time of COVID-19. Digital platforms such as the *OneImpact* tool can be used by communities to disseminate information on TB and monitor the availability, accessibility and quality of TB services so that TB programmes can respond to community needs in real time. Today countries, using OneImpact have already created digital surveys and adapted it to collect real time data on how COVID-19 is impacting TB service delivery from the perspective of people affected by TB. The aim is of the system is to immediately alert programmes of gaps in service delivery so that they can respond and ensure the continuity and accessibility of essential TB services for all.

Widely available messaging and social media tools can be used to share messages and information to different community groups as needed.

| 1. PROGRAMME MANAGEMENT DIGITAL TECHNOLOGY TOOLS | |
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| **Virtual Meeting Tools** | WhatsApp (video/audio call up to 4 people)<br>Viber (video/audio call up to 5 people)<br>Google Hangouts (video/audio call up to 10 people; conversations up to 150 people)<br>WeChat<br>Skype (Skype Business is HIPAA compliant)<br>Microsoft Teams<br>Zoom<br>Webex<br>GoToMeeting<br>Join.Me<br>Ready Talk<br>BlueJeans |
| **eLearning and Clinician Networking** | Many of the virtual meeting tools listed above can be used to deliver webinars. Some additional eLearning tools are listed below:<br><br>Project Echo<br>*Platform used for training and networking of clinicians to share expertise on patient management.*<br><br>Coursera<br>Moodle<br>Udemy<br><br>Governments and other organizations can use platforms such as these to build and offer self-paced online trainings for their workforce. |

| 2. DIGITAL SCREENING AND DIAGNOSTICS TOOLS | |
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| **Teleradiology** | TRS Solutions LLP (Indian Board)·<br>AlemHealth (Indian,(UK, AUS, NZ, US Board)<br>USARAD (US Board)<br>IOM Global Teleradiology and QC Center Manila (US Board)<br>Argus Radiology/REAL Radiology (US Board)<br>Flatworld Solutions (Indian Board) |
| **AI Chest X-ray Readers** | Qure.ai<br>Infervision<br>Delft CAD4TB<br>Lunit<br>JF Healthcare |
| **Laboratory Connected Diagnostics** | SystemOne Aspect / GxAlert<br>Savics DataToCare |

| 3. PATIENT CARE AND DIGITAL ADHERENCE TECHNOLOGIES<br>***Some of the above listed virtual conferencing tools can be used for provider and patient interaction*** | |
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| **Digital Adherence Platform** | Everwell Hub<br>The Everwell Hub is a comprehensive, open-source platform for adherence and patient management where health care providers can log into a single portal to register and follow up with patients who send digital adherence data from their choice of DATs. |

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| **Video-supported Treatment** | SureAdhere Mobile Technology<br>eMocha Mobile Heath Inc<br>Video-supported treatment utilizes a video connection between the patient and the health care provider to observe medication intake remotely. |
| **Medication Sleeves** | 99DOTS<br>Medication sleeves combine customized packaging and utilize free or low-cost interactions such as phone calls, SMS, USSD, or other messaging technology. |
| **Smart Pill Boxes** | Wisepill Technologies: EvriMed<br>Smart pill boxes use electronic sensors that automatically log daily doses via a mobile internet connection. |
| **Other DAT** | Keheala<br>Keheala uses USSD messaging to remind patients to take treatment and allows for self-verification of treatment. |

| **4. COMMUNITY ENGAGEMENT AND AWARENESS** | |
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| **Community Based Monitoring (CBM) Tool** | OneImpact<br>Tool to empower people and communities affected by TB with information on TB, with ways to connect with peers and services and to monitor the availability, accessibility and quality of TB services. OneImpact generates information for community advocacy and for programmes to take the necessary action to meet the needs of people affected by TB. |
| **Communications and Social Media Tools** | SMS Messaging<br>WhatsApp<br>Facebook<br>Twitter |