Interim Guidance for Pacific Island Countries & Territories: Use of digital health tools and systems for the COVID-19 health sector response

29 June 2020

OVERVIEW

As the world responds to the COVID-19 pandemic, there has been heightened interest in and the introduction of digital health tools and systems to support the health sector response and aid delivery of essential health services. New and existing digital health tools are being employed for virtual clinical consultations, contact tracing, surveillance, and risk communications among others. While digital health tools can be effective, compatibility with existing and planned future systems, total costs of ownership, ease of use, sociocultural, ethical and data privacy issues among others are key issues to consider. Digital health tools can be employed for COVID-19 and non COVID-19 activities.

In the Pacific, there is renewed interest in digital tools and systems within the health sector. Digital health tools and systems can help to extend services to widely dispersed populations, increase efficiency, and automate tasks. However, limited internet bandwidth, IT infrastructure, expertise and funds can constrain what is possible. It is therefore important to ensure that digital health tools and systems are introduced in a systematic manner in the Pacific to ensure cost optimization and effectiveness. Learning from and leveraging the experience of using digital health during COVID-19 response will be helpful as Pacific Island countries and areas (PICs) introduce wider use in the future.

Aim of this guidance

This interim guidance focuses on how and why affordable and existing digital tools can be deployed in a context-appropriate manner across PICs to strengthen COVID-19 response and for non COVID-19 services (see figure 1 below). It also highlights key operational and policy issues to consider while these existing and new technologies are being introduced.

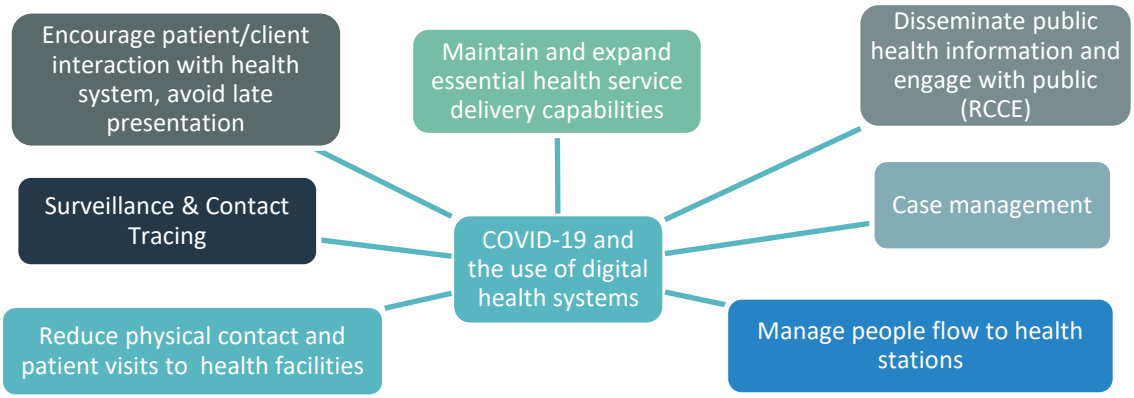

Figure 1: Benefits of using digital health tools and systems for COVID-19 and non COVID-19 response and activities

Target Audience

This interim guidance has been developed to support Directors of Health, ICT Managers and Administrators, Procurement Officers, and those responsible for coordinating the delivery and regulation of digital health systems.

Scope of this guidance

This interim guidance outlines how 4 widely available, affordable, and easy to install and maintain digital tools can be used to deliver and/or enhance 3 healthcare operations viz.: Risk Communication, Surveillance and Remote Service Delivery.

The four digital tools discussed are:

1. Hotlines or voice telephone (via cellular mobile or landline)
2. SMS one -way broadcast/blast
3. Handheld radio (HF/VHF/UHF)
4. SMS two-way (messaging platform or bot)

This guidance does not cover the following digital health tools:

- Emerging tools and technology such as contact tracing apps. Interested readers are advised to consult the WHO Guidance note. See:

  Digital tools for COVID-19 contact tracing
  - (https://www.who.int/publications/i/item/WHO-2019-nCoV-Contact_Tracing-Tools_Annex-2020.1); and

  Ethical considerations to guide the use of digital proximity tracking technologies for COVID-19 contact tracing
  - (https://www.who.int/publications/i/item/WHO-2019-nCoV-Ethics_Contact_tracing_apps-2020.1)

- The full collection of telehealth and telemedicine technologies. Further guidance and reference materials are available at: (https://www.who.int/news-room/detail/03-04-2020-digital-technology-for-covid-19-response). Pacific JIMT interim guidance on the use of telehealth and telemedicine for essential service delivery will be published and disseminated on or before 30 June 2020 to supplement this guidance note.

A brief outline of the overarching key operational and policy considerations for health systems seeking to adopting digital tools is presented.

Section 1: Digital health system considered per operational area

The table below provides an overview of the different digital health tools, their potential uses and functionality, per operational area.

Digital health tools and systems	Operational considerations
24/7 hotline or service	
For Risk Communication, can be used to: - Respond to public inquiries using Frequently Asked Questions (FAQ) on prevention and management of COVID-19, messages on access to essential non-COVID-19 health services, provide information on service provision and adherence to medications; - Establish referral linkages with other critical support services, including suicide management services, child protection, domestic violence and other; and - Triage COVID-19 related queries to other government agencies or sectors. **For Surveillance, can be used to:** - Obtain reports of symptomatic people who are either travelers or contacts of someone with confirmed or probable COVID-19, which may require a Rapid Response team to conduct further investigation; and - Undertake Event-based Surveillance (EBS) in the community for potential use by the Community Health Workers or its equivalent. **For Virtual Service Delivery:** - **during community transmission of COVID-19 can be used to:** - Provide home-based care guidance to mild/moderate COVID-19 patients with mild or moderate disease to reduce hospital presentations and admissions; and - **for non-COVID-19 patients can be used to:** - triage and prioritize non-COVID-19 essential health services and care needs; - remotely assign or patients to facilities or health care workers; - undertake patient monitoring by health practitioners and call-out to patients; and - offer virtual patient consultations and deliver essential health services such as, reviews of NCD management and antenatal care reviews based on a modified national protocol only.	- Toll free - Operative 24/7 - Functional internet for surveillance reporting. - Capacity for caller referral to other health or critical services, including call lines, protocols and designation of recipient health centres. - Daily/weekly call monitoring. - Ability to rapidly triage calls to surveillance team for rapid response.

SMS one-way broadcast/blast	
For Risk Communication, can be used to: - send bulk SMS regarding major updates to community; - provide advice and Frequently Asked Questions (FAQ) service on prevention and management of COVID-19; - disseminate messages on how to access to essential non-COVID- 19 health services; - provide advice and referral to critical support services, including suicide management services, child protection, domestic violence and others. **For Virtual Service Delivery for non-COVID-19 patients can be used to:** - provide patient reminders and advice on medications, treatment compliance, and lifestyle management.	- Telecommunication provider costs. - Possibility of undelivered SMS, meaning that some patients may not receive an SMS sent to them. To ensure delivery of SMS, the provider could send the same information in a second SMS or ask the patient to acknowledge receipt of the SMS.
SMS two-way (messaging platform or bot)	
Chatbot can be accessed either by SMS (free for users) or Internet-based chatting tools, linked to social media platforms like Facebook, Whatsapp and Viber. **For Risk Communication, can be used to:** - send short codes to get obtain response to specific questions and Frequently Asked Questions (FAQ) notes; - provide access to essential non-COVID-19 health services particularly protection and mental health services; and - provide information on service provision arrangements, tips for mental well-being and medication compliance and lifestyle advice, etc. **For Surveillance, can be used to*:*** - create a case/contact reporting system using simple response (numeric, yes/no, etc.) to report specific information regarding cases or contacts.	- Toll free - Short code - Technical setup required to connect Short Message service center (SMSC) and platform. - FAQs and key messages require being updated routinely and on schedule - Design flow of messages in a chatbot conversation flow design - Requires daily/weekly SMS response monitoring - Ability to rapidly triage calls to surveillance team for rapid response.

Handheld radio (HF, VHF, UHF)	
For Risk Communication, can be used to: - Provide situational update rapidly to public; and - disseminate messages on prevention, access to essential non-COVID-19 health services, and other emerging issues. **For Surveillance, can be used to undertake:** - Event Based surveillance; and - Case based reporting. **For Virtual Service Delivery can be used to:** - provide information on how to access health services (if clinics close or opening hours change); - target and encourage specific patient groups categories to attend designated clinics or redirect them to alternative facility; - provide reminders and advice regarding medication compliance, healthy lifestyle, etc.; - provide information on alternative sources of help, e.g. including service contact numbers for NGO service providers; and - provide remote support for management of patients and referrals (encrypted only) from primary health care worker to specialist clinician/nurse.	- Can be used in areas with no cellular mobile coverage - Transmission range/distance should be considered; VHF radio can be used for shorter-range communications, such as islands which are close to each other, e.g. from a municipality to their outer island health station, while HF radio can be used for longer-range communications, e.g. from an outer island health station to the main health facility in the capital city. - Users should be on the same frequency - Communication can be encrypted for privacy

Section 2: Benefits of using digital tools during COVID-19 response

Enhancing and using existing or new digital tools can benefit COVID-19 health sector response as well support the delivery of essential health services to non-COVID-19 patients. For example:

1. For **Risk Communications**, use of digital tools and systems can:
   - provide a centralized point of contact for the Ministry of Health or other Government functions during COVID-19 response;
   - ensure that the advice provided to the public is safe and consistent;
   - enable triage and monitoring of public questions and feedback; and
   - reduce the volume of manual workload needed to respond to enquiries via other two-way communication channels e.g. simple telephone calls or office visits.

2. For **Surveillance**, use of digital tools and systems can:
   - help to reduce the number of COVID-19 suspected cases presenting at health facilities, without forward notification, as they can be used as self-reporting contact points for patients;
   - increase capacity for health screening and identify symptomatic patients or contacts of confirmed/probable/suspected COVID-19 patients;

- improve Event Based Surveillance quickly at the community level regarding unusual health events such as atypical symptoms, atypical pneumonia, cluster of cases or unexplained deaths; and
- enable distance monitoring of quarantined close contacts of confirmed/probable/suspected COVID-19 patients.

3. For **Virtual Service Delivery**, use of digital tools and systems can:
   - enables reduction in the number of in-person visits to health facilities;
   - reduce the risk of healthcare facility-based transmission of COVID-19;
   - reduce the need for PPEs among healthcare practitioners;
   - reduce the risk of service denial, delayed treatment, and/or complications; and
   - ensure consistent triage and access to designated non-COVID-19 patients healthcare facilities if in operation.

Section 3: Considerations for implementation of digital health tools and systems

The digital health tools highlighted in this interim guidance are already commonly in use in the Pacific. However, they have not always been systematically employed for service delivery or emergency response. The COVID-19 response has stimulated an increased use of digital tools and this experience can be leveraged for the future as part of 'new normal' operations.

As digital tools are introduced or increasingly employed, it is critical during the design, development and operationalizing of such tools and systems, that end-users (healthcare providers, patients, and the public) are fully engaged at the outset. This will help to ensure that such tools and systems are acceptable and can meet the desired healthcare delivery objectives.

There are five key themes for consideration when digital tools and systems are being introduced to ensure system integration and sustainability for the future.

1. **Nature and requirements of the technologies**

   1.1. Ease of Use:
   - Local availability: consider what percentage of the target users have regular access to devices and what type of devices they have, e.g. a feature phone versus a smart phone?
   - Total Cost of Ownership: to maximize the deployment and use of digital health tools and systems, they should be accessible and affordable at purchase and for incidental costs to as many people as possible

   1.2. Established versus Emerging:
   - consider that emerging technologies may not be as widely available as established technologies
   - consider that not all aspects of an emerging technology may be immediately apparent or as well understood as aspects of more established technology
   - consider the direct and indirect effects of both emerging and established technologies on health service delivery

   1.3. Open Source versus Proprietary:
   - proprietary technologies are designed, developed and owned by a specific entity and may not be compatible with other systems or require additional integrating software (middleware). Open source technology is freely available

- for both open source and proprietary software, consider licensing costs and requirements, availability of technical support and vendor lock-in for integration with other systems

1.4. Compatibility and Inter-operability with existing systems:
- Internet Bandwidth Requirement: affects which digital health tools and systems will work best as some tools and systems require more bandwidth than others
- Power Requirements: some devices need to be charged regularly while others may need to be connected to a power source in order to work

2. Budget/finance

2.1. Total Cost of Ownership:
- Initial Capital Costs: these are one-time expenses incurred when the technology is first purchased. Consider also the cost of any retrofitting that needs to be done to existing systems and structures to incorporate new digital tools and systems
- Continuous Maintenance Costs: consider the lifecycle management of any digital health tools and systems deployed; i.e. the use of the selected digital health systems as an everyday part of healthcare and its delivery, will use of the selected digital health systems be discontinued post COVID-19?, will use of the selected digital health systems be maintained post COVID-19 and integrated into the health system?, how will maintenance of the selected digital health systems be done?

2.2. Total Cost to end users:
- Affordable Alternatives: consider minimal cost but high impact and ubiquitous technology; consider digital health tools and systems that are inexpensive and commonly used in the Pacific context
- Multipurpose tools and systems: consider procurement of digital health tools and systems that can be used across multiple operational areas in order to optimize investment

3. Health system structure

3.1. Alignment and synergy: consider that digital health tools and systems interaction with other existing systems and infrastructure, e.g. whether to use existing emergency numbers as COVID-19 hotlines

3.2. System readiness: consider the overall health sector's system readiness to deliver services via digital means
- Service Protocols and Operating Procedures: consider adaptations to national health protocols that may be needed to incorporate digital health tools and systems
- Clinical Governance & Accountability Issues: consider patient safety, confidentiality, service continuity, quality of care and professional accountability issues. How would the quality of care and services delivered digitally be assured?
- Staff Training: consider training to be provided to staff and other users on the effective operation of digital health tools and systems
- Information management: consider how to consistently and effectively record digital and electronic activities as well as the incorporation of these data into health information systems

4. Policy and governance

4.1. Overarching Regulatory Frameworks: consider national regulatory/legislative frameworks for health as well as telecommunications/ICT; what legislation or regulations guide the use of digital health tools and systems for healthcare and health service delivery?

4.2. Accepted Standards and Specifications: use technologies with accepted or industry agreed standards. Consider using technology whose standards are defined in your national frameworks where such exist.

4.3. Data Governance Framework: consider confidentiality and privacy issues, data ownership, storage and access, legitimate use, etc. Who owns the data collected and/or produced? What data will be collected and how? Who would have access to these data? Where will these data be securely stored?

5. Culture

5.1. Acceptability: During the design, development and deployment of any digital health tools and systems, it is strongly recommended that end-users (health providers, patients, the public) are engaged from the outset to ensure that the system is accepted and suited to the end-user.

5.2. Familiarity: consider user's [digital] habits – both healthcare providers and patients/clients; e.g. what digital health tools and systems are they familiar with? how do they use apps or consume social media?

5.3. Context: for example, are certain digital health tools and systems more suitable than others for patient/client interactions in the region?

5.4. Attitudes and expectations: are healthcare providers ready to deliver services via digital health systems? Is the community, patients/clients ready to receive health services via digital health?

This document has been developed in accordance with global guidance and contextualized to the Pacific context by the COVID-19 Pacific Joint Incident Management Team.