

# Pacific Health Information Network

## Strengthening Health Information Systems and Digital Health

### TECHNICAL DOCUMENT: 8.1 Digital Health Profile & Maturity Assessment Toolkit (DHPMAT) Phase 3 project with Pacific Island Countries & Areas

#### 1. BACKGROUND

In May 2018, the 71st World Health Assembly (WHA) passed Resolution WHA71.7 on Digital Health urged member states “*To assess their use of digital technologies for health, ...to identify areas of improvement, and to prioritize ...greater utilization of digital technologies, as a means of promoting equitable, affordable and universal access to health for all...*” A WHO discussion paper on the adoption of digital health initiatives presented at the 2018 Heads of Health meeting prompted PICs to determine their level of maturity in digital health development. These concerns are consistent with development and implementation of digital health strategies globally.

The **Digital Health Profile & Maturity Assessment Toolkit (DHPMAT)** was developed with WPRO in 2020 to assess the Digital Health Maturity of the PICs, and was completed in 2021. **National Digital Health Maturity (DHM)** is used:

- to determine resources for DH planning and strategy development, implementation and quality improvement;
- to guide the adoption/adaptation of digital public goods and development of standard operating procedures;
- as a necessary indicator for all digital health strategies and interventions.

The **DHPMAT** operationalises **DHM** into five essential digital health foundations, with indicators for each:

1. ICT infrastructure, equity & affordability
2. Essential digital tools
3. Readiness for information sharing
4. Enablers of adoption and trust
5. Quality improvement, monitoring & evaluation (QIMME)

We provide an the staged **Digital Health Maturity Model (DHMM)** in the resources section below as preparatory reading for all participating stakeholders.

This project proposed the following objectives:

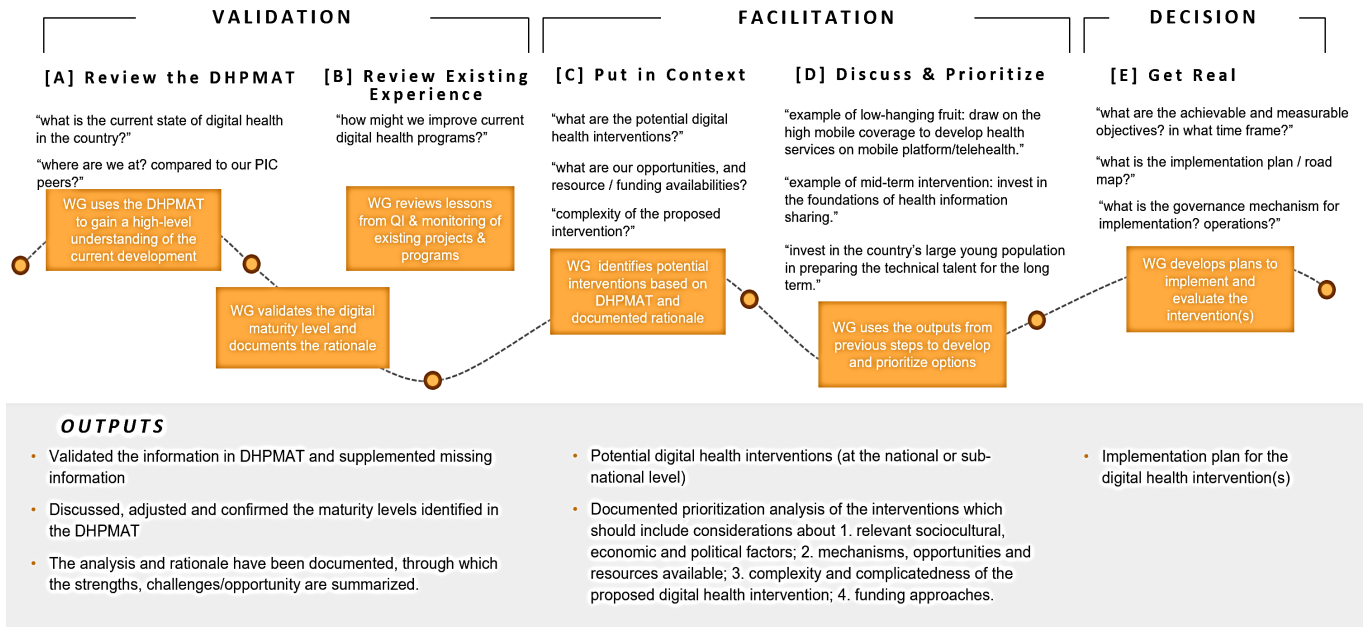
- 1) To develop an individual Country Profile for each PIC that includes the PIC’s unique features and strategic priorities, to assist the PICs in understanding their current DHM:
- 2) To facilitate the dialogue within the country on developing and scaling digital health solutions to address the country’s priorities; and
- 3) To co-create, with the PIC and partners, the national roadmap towards greater Digital Health maturity.

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### 2. ACTION TAKEN

The process by which these roadmaps are co-created together with PICs is illustrated below:



PIC stakeholders will first articulate their national context and objectives with respect to the following criteria:

<p><b>Country context</b>                  Harness digital health to strengthen health systems to support integrated person-centred services, quality improvement, population health programs &amp; policy</p>	<ul style="list-style-type: none"> <li><b>Health priorities:</b> e.g. universal health coverage through universal health insurance</li> <li><b>Objectives</b> for digital health development: Improve digital health maturity by one level</li> <li><b>Opportunities:</b> e.g. current strengths; Entry points (individual, facility or population); Donor Agencies</li> <li><b>Challenges:</b> e.g. rurality; low digital health literacy; proprietary systems; sustainability</li> </ul>
<p><b>Objective of digital health development</b>                  Enterprise-wide architecture &amp; platform to support interoperable digital tools and data</p>	<ul style="list-style-type: none"> <li><b>Articulate a vision and mission?</b></li> <li><b>Practical goal:</b> e.g. Co-develop a strategy with simple, measurable, achievable, realistic and time limited (SMART) objectives aligned with the digital health maturity to ensure that interventions are implementable and sustainable in all settings.</li> </ul>

Stakeholders will then assess their PIC for its current digital health maturity with respect to the five digital health foundations, and then articulate a vision for their desired DHM using simple, measurable, achievable, realistic and time limited (SMART) objectives. An example is provided in the following table:

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DH Foundations	Current DH maturity level (as assessed)	Desired maturity level & activities/resources for achieving this
<i>ICT infrastructure, equity &amp; affordability</i>	(Current maturity level: <b>Basic</b> ) A mobile phone network that is not stable, equitable or affordable for all citizens.	<b>Desired Maturity level: Standardised</b> <ul style="list-style-type: none"> <li>Identify evidence-based, reliable, cost-effective and sustainable options;</li> <li>Seek ICT infrastructure funding for standards-based mHealth infostructure.</li> </ul>
<i>Essential digital tools</i>	(Current maturity level: <b>Controlled</b> ) Digital health tools are not consistently stable, usable, useful or evidence-based.	<b>Desired Maturity level: Standardised</b> <ul style="list-style-type: none"> <li>Compliance to standards for digital health tools, including affordability;</li> <li>A national unique person (patient/clinician) and facility identifier system.</li> </ul>
<i>Readiness for information sharing</i>	(Current maturity level: <b>Controlled</b> ) Data & information are of uncertain quality or interoperability to enable useful sharing.	<b>Desired Maturity level: Standardised</b> <ul style="list-style-type: none"> <li>Identify relevant national/international standards for data, data models, architecture, and data analytics;</li> <li>Establish data and information governance and stewardship structures.</li> </ul>
<i>Enablers of adoption and trust</i>	(Current maturity level: <b>Controlled</b> ) The competencies of the digital health workforce is not accredited or maintained	<b>Desired Maturity level: Standardised</b> <ul style="list-style-type: none"> <li>Pre- &amp; in-service training of workforce in digital health e.g. tools, e-learning;</li> <li>Digital literacy programs in schools, colleges and work places.</li> </ul>
<i>Quality improvement, monitoring &amp; evaluation (QIMME)</i>	(Current maturity level: <b>Controlled</b> ) The program logic of current projects is not explicit at the project level e.g. RE-AIM, outputs and impacts.	<b>Desired Maturity level: Standardised</b> <ul style="list-style-type: none"> <li>A QIMME program for digital health intervention across many centre, emphasizing measurable process, outputs and impact indicators along with realistic deliverables and milestones.</li> </ul>

### 3. CONCLUSIONS

At the 2023 PHIN meeting, we will engage all PICs in completing the pending roadmaps or developing for PICs ready to undertake this pathway. To this end, we are looking forward to broad and proactive participation of all stakeholders to develop PIC-specific DHM roadmaps for each PIC.

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Essential digital health foundations	Digital Health Maturity Levels (with examples)				
	LEVEL 1 BASIC UNPREDICTABLE KNOWLEDGE & DATA NOT SHARED	LEVEL 2 CONTROLLED REACTIVE & PROBLEM DRIVEN KNOWLEDGE & DATA SILOS COMMON	LEVEL 3 STANDARDISED REQUEST DRIVEN ORGANISATION LEVEL KNOWLEDGE & DATA SHARING	LEVEL 4 OPTIMISED SERVICE DRIVEN CROSS ORGANISATION KNOWLEDGE SHARING & COLLABORATION	LEVEL 5 INNOVATIVE VALUE DRIVEN ENTERPRISE-WIDE KNOWLEDGE SHARING & COLLABORATION
<b>ICT &amp; IoMT infrastructure</b> e.g. penetration, affordability, reliability, ICT supply chain	<u>Examples:</u> Available but unaffordable and unreliable Internet & supply chain	<u>Examples:</u> Affordable & somewhat reliable Internet and supply chain	<u>Examples:</u> Support services and ICT hardware (supply chain) mostly accessible	<u>Examples:</u> Fully accessible & timely support services and ICT hardware	<u>Examples:</u> Infrastructure & support services facilitate innovations
<b>Essential tools</b> e.g. unique ID, social media, HIS/eHR/eMR, mHealth, teleHealth	<u>Examples:</u> Local ad hoc adoption & use of digital tools; Telephone = telehealth	<u>Examples:</u> Regional coordination of adoption & use of digital tools; Asynchronous info sharing	<u>Examples:</u> National benchmarks & standards for digital tools; Synchronous info sharing	<u>Examples:</u> Data analytics & Quality of real-world data; telehealth integrated with EHR	<u>Examples:</u> Innovations with decision support systems with integrated telehealth and EHR systems
<b>Readiness for information sharing</b> e.g. standards-based, interoperable, hardware, software & protocols to support security & privacy	<u>Examples:</u> Standalone datasets; No terminology standards	<u>Examples:</u> Ad-hoc sharing of datasets; Local terminology	<u>Examples:</u> Data sets integrated with HIS; National terminology	<u>Examples:</u> Data shared & interoperable; Data-driven policy & practice	<u>Examples:</u> National Common Data Model driving ethical use of linked health data for innovations
<b>Enablers of adoption</b> e.g. regulations, policy, strategy, governance, capacity building, funding	<u>Examples:</u> No digital health legislation; No training programs; No governance structures	<u>Examples:</u> Digital health privacy/security legislations; Ad-hoc training programs; Ad-hoc governance	<u>Examples:</u> Other digital health legislations; Accredited training programs; Relevant digital health committees	<u>Examples:</u> Artificial Intelligence legislation; National training programs; National digital health agency	<u>Examples:</u> Legislation facilitate innovations; Multisectoral programs; Digital health ministry
<b>Quality improvement, measurement, monitoring &amp; evaluation (QIMME)</b>	<u>Examples:</u> Local ad hoc QIMME activities	<u>Examples:</u> QIMME routinely embedded in digital health programs	<u>Examples:</u> QIMME coordinated for CER across programs and regions	<u>Examples:</u> National digital health program with embedded QIMME enabling CER	<u>Examples:</u> Innovating with novel QIMME methods for new models of care