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MAPPING OF KEY DIGITAL HEALTH INITIATIVES BUILDING RESILIENCE FOR CURRENT AND FUTURE PANDEMICS

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DEFINITIONS

Standards: Formally ratified standards created and adopted by one or more influential bodies such as governments or international organizations (WHO, UN, etc.). Also includes legislation and regulation adopted by governments.

Guidelines: Published guidelines created by relevant parties.

Toolkits: Prepackaged materials, either physical or digital, that provide actionable guidance. To be considered a toolkit, the materials must be readily available and multidimensional. For example, a downloadable notice about mask wearing would not be considered a toolkit. However, a guidebook on workplace safety for employers combined with safety posters and related forms/materials provided in a single package would be considered a toolkit.

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ACRONYMS

AI	Artificial Intelligence
APIs	Application Programming Interfaces
CCI	COVID Credentials Initiative
EMRs	Electronic Medical Records
EU	European Union
FG-AI4H	Focus Group on Artificial Intelligence for Health
HL7 FHIR	Health Level Seven Fast Healthcare Interoperability Resources
IATA	International Air Transport Association
ICT	Information and Communication Technology
IEEE	Institute of Electrical and Electronics Engineers
OECD	Organisation for Economic Co-operation and Development
PHIRI	Population Health Information Research Infrastructure
SDGs	Sustainable Development Goals
UK	United Kingdom
UNICEF	United Nation's Children's Fund
WEF	World Economic Forum
WGA	Whole-of-Government Approach
WHO	World Health Organization

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EXECUTIVE SUMMARY

It is important to leverage best practices from the ongoing crisis for strengthening health-care resilience in order to withstand future crises. However, with a large and growing selection of digital tools available, it is a challenge for countries to know what tools are both available and important and which tools best suit their context and needs for COVID-19 response and recovery and for building resilience to future crises.

The lack of a globally-accepted standard for documenting and assessing best practices in digital health for pandemic response, recovery, and management is hampering countries' progress in strengthening their digital resilience. In many instances, this has been exacerbated by the lack of data standards and interoperability specifications within and across countries and by a mismatch between the technologies adopted and the digital readiness of the countries.

From a literature review of selected success cases in COVID-19 response, recovery, and management, some key and interrelated factors stand out as critical building blocks for strengthening the resilience of the digital health ecosystem. The absence of these key building blocks creates gaps in the effectiveness of digital health solutions. They include: 1) fragmentation in the health ecosystem due to the absence of a digital health strategy to guide coordination; 2) lack of policy and regulatory frameworks that support innovation while protecting security and privacy, undermining trust and uptake of digital health solutions; 3) lack of consideration for digital health inequalities; 4) lack of ethical governance and transparency in the design and roll out of digital health solutions; and 5) inadequate systems and workforce capacity to manage data and digital technologies.

Since the onset of COVID-19, various coalitions, alliances, and collaborations have addressed the global health crisis. The eWorldwide Group and IEEE began implementing a Global Digital Resilience Initiative in March 2020, bringing together stakeholders from across multiple sectors to fast-track lessons learned and increase the ability of nations to mitigate the pandemic. The initiative aims to redefine and adopt a holistic strategic approach to digital resilience and focuses on developing frameworks, standards, guidelines, and tool kits for effective, ethical, and inclusive technologies for COVID-19 response, recovery, and management.

The pandemic has created an opportunity to redesign and strengthen health-care systems to ensure they are able to both address longstanding vulnerabilities and inequalities of the system and sustainably respond to future crises. Despite promising collaborative initiatives to develop principles, standards, and guidelines to help late adopters of digital health and developing nations catch up, policymakers are struggling to adopt and integrate digital technologies with their domestic health systems.

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