

State of the art digital health projects build on existing evidence, and normative guidelines, frameworks, and tools in various areas, ranging from software development to financing and equitable programming. In the context of the GIZ Digital Innovation in Pandemic Control (DIPC) Initiative, the Robert Koch Institute, Germany, has conducted a comprehensive analysis on key digital public health definitions and concepts, and on 75 normative resources for digital health programming across 11 digital health topics, published between 2012 and early 2024 [\[link\]](#). Findings from the report have been summarized in form of 20 easy to use Factsheets.

The current factsheet (11/20) summarizes the findings on the identified **Guidelines, Frameworks, and Tools for Solution Design and Development**, with a focus on user-centered approaches to developing effective, scalable, and ethical digital health solutions.

Factsheet 11

Guidelines Frameworks and Tools for Solution Design and Development



Target Audience

Primary Users: Developers, Healthcare Providers

Secondary Users: Donors, government bodies, ministries of health

Relevance

Normative resources for digital solution design and development are important because they are a means to ensure effectiveness, safety, and user-friendliness of digital tools. They also promote interoperability with existing systems and to guide the ethical handling of sensitive data. They standardize development practices to address local and global health challenges, fostering innovation and collaboration among stakeholders. By adhering to national and international standards, these guidelines facilitate the creation of tailored solutions that enhance efficiency, automate tasks, and improve healthcare delivery through informed decision-making.

Resources for solution design and development enable:

- Scalability
- Sustainability
- Relevance to local and global contexts and challenges
- Evidence-based and standardized practice
- Standardize development practices

Findings

Number of resources identified: 4

The design and development of DH solutions require a comprehensive, user-centered approach to ensure their relevance, effectiveness, and integration within health systems. This review highlights four key resources that emphasize user-focused methodologies and provide critical guidance for DH solution design that also hold transformative potential. Whilst UNICEF's Human-Centered Guide and the Collaborative Requirements Development Methodology (CRDM) prioritize user engagement through "design thinking" or "human-centered design" principles, the WHO SMART Guidelines expand on CRDM principles, providing a structured approach to digitizing paper-based clinical guidelines. Through the Digital Adaptation Kit (DAK) in Layer 2, the SMART guidelines approach utilize personas, user scenarios, and workflows to transform clinical processes for topics such as antenatal care (ANC), family planning, and HIV into interoperable, scalable digital solutions.

While the SMART guidelines serve as a cornerstone for digitizing health systems, their effectiveness depends on careful consideration of broader contextual factors, including interoperability, scalability, legislation, and digital literacy capacity strengthening. For instance, their integration into national digital health architectures requires alignment with additional frameworks, such as the WHO's Digital Implementation Investment Guide (DIIG) and standards for technical interoperability and regulatory compliance.

Guidelines

Designing Digital Interventions for Lasting Impact: A Human-Centered Guide to Health Deployments

Application of human-centered design principles to design the DH.

Published by: UNICEF

Year: 2018

Language: English

Collaborative Requirements Development Methodology (CRDM)

A human-centered requirement-gathering process for system development that emphasizes local ownership and collaboration.

Published by: PATH

Year: 2015

Language: English

Xcertia mHealth App Guidelines

A guideline for mobile health applications (mHealth apps), that addresses five key areas of design and development.

Published by: Various Authors

Year: 2019

Language: English

SMART Guidelines

A comprehensive guideline and framework with five knowledge layers for the technical process of incorporating WHO health and clinical guidelines into digital systems.

Published by: WHO

Year: 2021

Language: English



This is based on "[*Navigating the Digital Health Ecosystem: A Review of Key Guidelines, Frameworks, and Tools*](#)"

Read the full report [here](#) or scan the QR code

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