

A standardized health services framework for developing digital health tools

Leveraging a human-centric design approach

Context

Digital health tools often lack standardization, leading to fragmented implementation across health programs. The project aims to create a unified framework that promotes consistency and user-centric design in digital health services within primary health care (PHC).

Key objectives

- Develop a standardized framework for the primary health care service delivery ecosystem to guide the creation of digital solutions. This will include a compendium detailing health care service, primary health care providers, and national health programs.
- Deploy the validated framework to test three health thematic areas: reproductive, maternal, newborn, and child health plus adolescents (RMNCH+A); non-communicable diseases (NCDs); and mental health (MH).
- Develop an intuitive, end-user digital tool based on the framework and compendium for RMNCH+A, NCDs, and MH within the primary health care service delivery ecosystem.
- Demonstrate and disseminate the framework and tool to relevant stakeholders.



Project approach and methodology

The standardized framework for digital health solutions was developed using an agile and iterative methodology. The principles of a human-centric design (HCD), as reflected in Figure 1, were applied to identify the problem and arrive at the solution.

> Using a humancentered design approach to co-create solutions with users to solve their most pressing challenges

DISCOVER Understand the context and user needs by reviewing the literature and stakeholder consultation 2 DEFINE Analyze the learnings and insights, and arrive at a possible solution 3 DESIGN Develop the framework, test, gather feedback and iterate DREAM Validate through use Figure 1, Human-centered design. cases, modify and roll out

The first step involved identifying the needs of the digital solution developers, particularly in understanding the primary health care service landscape. Ideas and insights for the framework were gathered through a literature review and stakeholder consultations. These insights were then analyzed to define the key themes and facets of the framework. The process continued with designing, testing, and gathering feedback from stakeholders, including expert groups, followed by iterative refinements.

Key activities in developing a theme-agnostic health framework and an Excel-based compendium of health care services included:

- 1. Desk research and literature review: This activity aimed to compile comprehensive information on primary health service delivery in India, covering service delivery points, health care providers, service packages, and national health programs by thematic area.
 - Data collection: Documents were gathered from the Indian national health guidelines, health department portals, WHO website, and peer-reviewed articles.
 - **1.2. Inclusion Criteria**: The review focused on national guidelines relevant to the primary health care service delivery in India.
- 2. Stakeholder Engagement involved two main activities:
 - **2.1. On-site Visits:** The project team visited primary health facilities across Assam, Madhya Pradesh, Meghalaya, and Odisha to validate information from literature and observe the health service landscape firsthand.
 - 2.2. Interviews and Group Discussions: Semi-structured interviews with health care seekers, providers, and digital solution providers were conducted to gather insights into the care continuum, challenges faced, and potential solutions.

Analyzing insights from literature review and stakeholder engagement

With the aim to develop a solution for digital tool developers, insights were classified, analyzed, and shared with experts, revealing key challenges:

- 1. Limited knowledge
- 2. Complex data processes

The analysis suggested that a themeagnostic, standardized health framework would help developers by outlining primary care journeys, key providers, and care packages. This framework would streamline information collection and focus developers on essential data points, ensuring accuracy and consistency in digital health tools.



Developing the standardized health service framework



- 1. **Mapping and identifying framework facets along with** categorizing information under broad facets of health care service delivery.
- 2. Classifying facets and standardizing nomenclature where in unique and overlapping health service delivery aspects were appropriately arranged, and varied terminologies were standardized.
- 3. Developing a thematic map to show linkages between various facets after organizing and categorizing information using standardized nomenclature
- 4. Developing the excel-based compendium as a comprehensive reference, consolidating primary health care services across thematic areas and eliminating the need for multiple guideline consultations.
- 5. Validating the framework and compendium through feedback from stakeholders, including digital solution developers, NHM, NHSRC, private sector entities, and public health experts, at state and national levels.
- 6. **Deployment and testing** to validate functionality across selected three use cases (RMNCH+A, NCDs, and MH)



This adaptable framework is designed to provide a comprehensive understanding of public health service delivery mechanisms by systematically mapping all the services and components associated with public health service provision. It can be applied across various thematic areas-such as communicable diseases, vector-borne diseases, and other public health priorities-by organizing programmatic guidelines under the specific headings and facets identified within the framework. The framework can be used to create detailed mappings that help stakeholders visualize how different services are interlinked and how program guidelines are implemented across various levels of care. The Figure 2 below represents the framework facets with RMNCHA as an use case.



Figure 2 Framework using RMNCH+A as a use case.

Excel Compendium

A compendium was developed based on the nine facets of the aforementioned framework. An Excel-based mapping of public health service delivery was conducted in depth across three thematic areas: RMNCH+A, NCDs, and Mental Health.

The resulting compendium serves as an organized reference manual for the services delivered within each thematic and sub-thematic area. It is designed for the digital solution developer community, ensuring that the information is both accessible and easily understood. The excel compendium can be accessed through the QR Codes provided.

To access the compendium tools, scan the QR Code below



End-user plug-and-play tool

The team developed an automated digital tool to help users visualize and navigate service delivery workflows from an Excel-based compendium. Its dynamic pivoting across three thematic areas offers a clear, visual representation of complex healthcare workflows. Designed for digital system developers, policymakers, and administrators, it simplifies understanding service organization and delivery while aligning with clinical guidelines. The tool serves as both a foundational design aid for digital solutions and a reference for strategic decision-making.

A user manual is attached for more details, and a QR code above on the right provides direct access to the tool.

To access the full project report, scan the QR code below.



To access the tool, scan the QR Code

Conclusion

The theme-agnostic framework, along with the compendium and the end-user tool, has versatile specifications that can be customized according to state-specific requirements. This would require adequate product demonstration, dissemination at appropriate platforms, and support for institutionalization at various levels.



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