A standardized health services framework for developing digital health tools

Leveraging a human-centric design approach

>> Introduction

Under the project, one of the key objectives was to develop a standardized framework for the primary health care service delivery ecosystem to guide the creation of digital solutions, including an excel based compendium detailing facets of the framework such as health care services, primary health care providers, and national health programs. Recognizing the potential for greater usability, the team also initiated the development of an automated, intuitive, end-user digital tool designed as a ready reckoner for end users to visualize and navigate the service delivery landscape compiled in the Excel-based compendium. This tool was developed with the expertise of a technical agency specializing in digital applications to support complex data relationships and ensure streamlined user experience.

Key Features:

- **Dynamic visualization**: Integrates framework facets into a schema diagram, visually simplifying complex healthcare workflows.
- One-to-one and one-to-many relationships: Connects single elements to single and multiple elements of different facets for comprehensive data mapping.
- **Pivot functionality**: Enables dynamic forward and backward linkages for seamless navigation across selected elements.
- Filtering and refresh functionality: Refine searches by filtering across framework facets and reset to default state using the refresh.
- Schema Download: Export all or filtered data in Excel or image formats.
- Public Access: Available in the public domain for unrestricted use.

>> Navigating the Tool:

Visit the web tool at https://www.phsdframework.net/ or Access through the QR Code



Click the above-mentioned link or paste the URL into your browser to access the web tool. It is compatible with all devices (desktop, laptop, mobile, tablet), though the best experience is on a desktop or laptop. For smaller device screens, using landscape mode is recommended for optimal viewing.

The Public Health Service Delivery Framework tool features a clean, organized layout with a top navigation bar as shown below. Key elements include a Home button with a project overview and links to download the brochure, report, and Excel compendium (consolidated or separate sheets). A brief description of the end-user tool precedes its user guide link. The Tool button offers schema downloads in Excel and SVG formats, while Refresh resets all features. A Filter button enables data customization. Users can access thematic area and service component-specific data points by clicking on a service subcomponent, leading to a dedicated page.

Below this, a horizontal menu allows users to navigate through various facets of the framework, such as Health Thematic Area, Population Cohort, Service Delivery, Service Delivery Type, Service Component and Service Subcomponent. Additionally, clicking on a subcomponent highlighted in red allows the user to access its related classification and protocol. Each facet of the framework depicts detailed sub-sections that display a dynamic, interactive schema diagram visualizing healthcare service delivery pathway.

Figure 1. Snapshot of the navigation bar (below)





Care Package → Se

Service Delivery →

Service Delivery Type \rightarrow Service Component \rightarrow

i Sub-Component

G Refresh) = Filter

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User Guide for the End-User's Plug and Play Tool

Figure 2. Schema diagram on the web tool displaying all facets of the framework



The schema diagram below the horizontal menu represents complex relationships through linked nodes, offering a clear workflow from thematic areas to detailed service components and service subcomponents. Clicking on any node reveals its connections dynamically. Users can navigate interactively from either left to right or right to left tracing linkages across the facets. This functionality enhances the understanding of healthcare service delivery processes by illustrating the multiplicity of connections across the public health service delivery landscape.

2. Use the Pivot functionality

The pivot functionality allows you to explore any facet of the framework by clicking on a specific element. Once selected, the tool highlights the element, and all associated forward and backward linkages. The users can click and select multiple nodes to generate a combination of linkages among multiple facets at the same time. This feature enables users to trace the relationships between elements, offering a dynamic way to understand how each service component connects within the broader healthcare service delivery framework.

3. Use the Filter section and Refresh functionality

To use the filter option, select the filter button on top right of the web tool, popping up a filter section on the extreme left of the web tool page. The filter lists all the facets of the framework. This multi-level filter enables users to filter out specific facets and directly navigate to specific elements within the framework. A search option is also available to find specific facets or elements therein, using keywords. Notably, the government programs, service providers, and points of service delivery are not visible on the main schema but can be filtered to reveal their linkages with all or any other selected facet.

The refresh button in the end-user tool also allows users to reset the interface, clearing any applied filters, selections, or adjustments to the view. It restores the tool to its default state, ensuring users can start a new exploration without retaining previous settings.

Example

Selecting RMNCH+A as the thematic area will filter out all facets listed below that are associated with RMNCH+A and disable all others associated to any other thematic area like NCD and MH. If one selects any of the four filtered sub-thematic areas in RMNCH+A namely, maternal health, child health, adolescent health and family planning, associated population cohorts will get displayed. If pregnant woman is selected as the population cohort, again the filter will enable only the associated elements across all the facets listed below, viz. only care around pregnancy and childbirth will get filtered on the panel.

Consequently, as each filter is selected, the right panel will display all the forward and backward linkages of that facet element with other facet elements till service component and subcomponent. Clicking on the component/subcomponent in the right panel will pop up the classification and protocol in case it is applicable for the given component/ sub-component.

Applications

For Digital health solution developers- Serves as a design aid for creating digital health systems aligned with clinical guidelines, ensuring accuracy and consistency in implementation.

For Policymakers and Administrators- Facilitates informed decision-making by visualizing service delivery landscape and identifying areas for improvement.

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