Toolkit for PHC Performance Management Dashboard Redesign

JLN PHCPM Learning Collaborative

March 2026

JOINT LEARNING NETWORK
For Universal Health Coverage

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 This work was funded in whole or in part by a grant from the Gates Foundation. The views expressed herein are solely those of the authors and do not necessarily reflect the views of the foundation.

Suggested citation

Toolkit for PHC Performance Management Dashboard Redesign. Joint Learning Network for Universal Health Coverage, Aceso Global; 2026.

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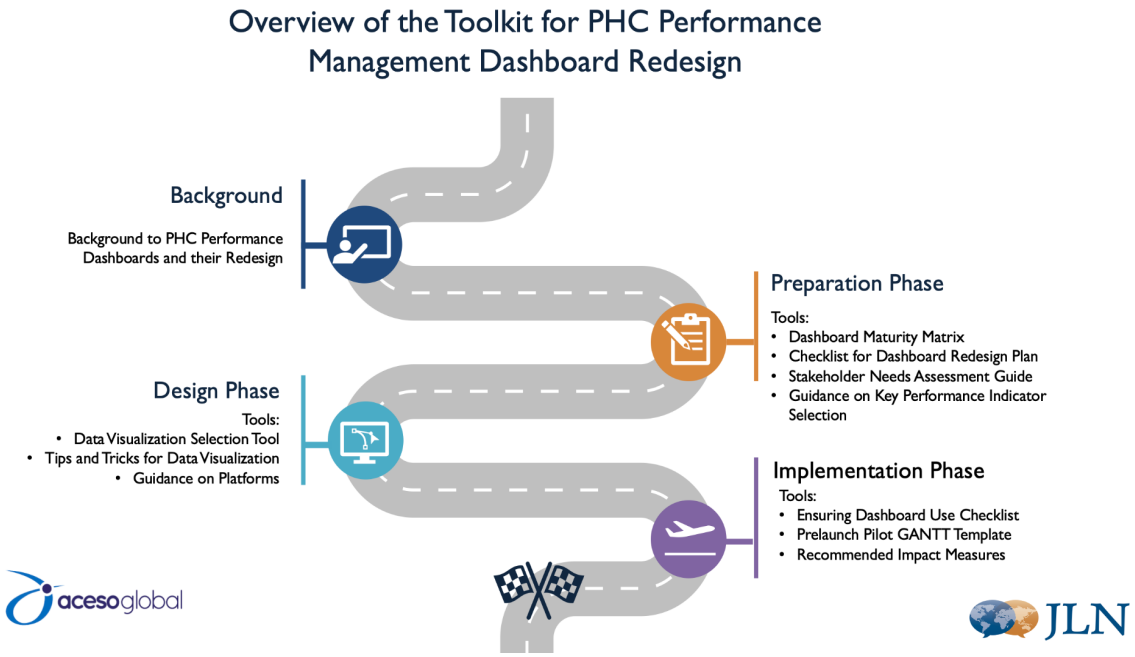
Preface

The Joint Learning Network for Universal Health Coverage (JLN) is an innovative, country-driven network of practitioners and policymakers from 35 countries committed to achieving Universal Health Coverage (UHC). It facilitates high-impact, peer-to-peer experience sharing to learn, co-develop and implement solutions to shared challenges of providing care to the more than 3 billion people whom they serve.

The Learning Collaborative on Primary Health Care Performance Management (PHCPM) ran from January 2024 to December 2025, and involved 36 national and sub-national primary care from 13 countries - see below. The collaborative used an 'implementation learning' approach, with the first six months after initial scoping dedicated to building up a foundation of technical knowledge on PHC performance management across the group, followed by a nine-month implementation learning phase in which the group focused on peer support for real-time reforms being made by countries across two workstreams: - a hard skills development course (to be rolled out by South Africa, Liberia and The Philippines) and a redesign of the main PHC performance management dashboard (Mongolia and Nigeria). The final six months was used to consolidate the learning from these workstreams into practical outputs to be used by all countries in future, as well as continued support for implementer countries in each workstream.

This Toolkit brings together the various knowledge products and other practical tools developed as part of the Dashboard Redesign workstream, and is intended to be an end-to-end guide that countries can use either to select individual tools from, or to use as the basis for a comprehensive review and redesign of their own PHC performance dashboards.

Toolkit Structure



Introduction

What is a PHC Performance Dashboard?

When trying to paint a picture of comprehensive PHC performance across a certain region or provider network, dashboards are a powerful tool. PHC performance dashboards are **digital, visual interfaces that present key PHC performance indicators that are regularly updated**, sometimes automatically, as new data is added - and often with **interactive elements** that mark them out from a static performance report.

A significant strength of dashboards as a tool for PHC management–when built properly– is their versatility among audiences. **Dashboards can, and ought to be, tailored to different roles in order to best meet their needs**. For example, a minister or senior official might be interested in seeing a quick snapshot summarizing lots of providers across a single indicator, while a facility manager might want a more magnified view of their performance across multiple indicators and how this compares to their local peers. With different users come different levels of interactivity: while the minister or senior official might be satisfied with a static, preset view to make quick judgements, a facility's administrator might want more filters and other dynamic elements and other analytic functions that allows them to drill down into different KPIs and providers. A prior understanding of different users' needs for a PHC performance dashboard gives vital clues as to how it should be built.

These differences were evidenced by the PHC performance dashboards submitted for discussion and comparison by the 13 countries in this collaborative. Comparative analysis revealed that **some countries' dashboards are fairly simple** - 6-10 key indicators presented in a simple manner, such as bar graphs. Other countries, conversely, had **more complex features - a central navigation screen acted as a portal for multiple dynamic tabs** for financing, workforce, medicines and other performance dimensions, each with up to a dozen indicators that could be filtered and analyzed by geographic level, facility, and time period.

Figure 1: A simple performance dashboard providing a static view of a few key indicators, with a single dropdown menu allowing the user to select from different PHC facilities

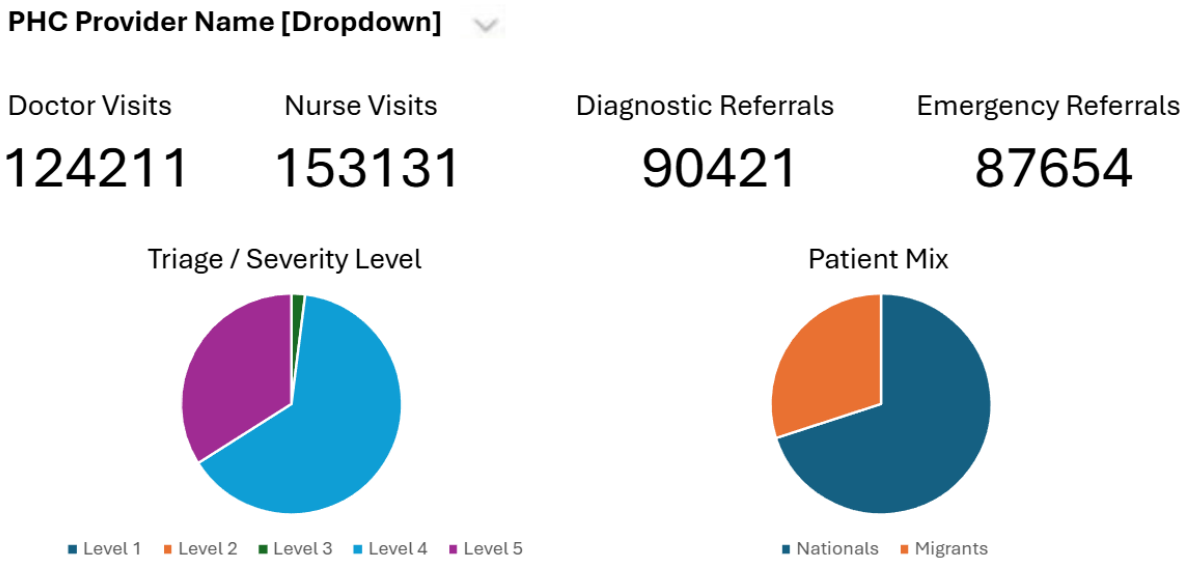


Figure 2: A more complex dashboard with numerous interactive elements allowing the user to select different indicators, time periods, facilities and geographic regions.

Why redesign a PHC Performance Dashboard?

Simple and complex PHC performance management dashboards both have their uses depending on whether the goal is to focus minds on a few key metrics or allow a more comprehensive overview of performance. But regardless of the style or complexity of the dashboards used by PHC service leaders in

this collaborative, one strong commonality was the drive to improve them. In internal polling, **all 13 of the countries in the PHCPM Learning Collaborative rated improvement of their PHC performance dashboard as either a "very high priority" (85 percent) or a "high priority" (15 percent).** Common issues that needed to be addressed included:

- Important key performance indicators **(KPIs) being buried** under dozens of less important ones,
- The dashboard **not reflecting the real world priorities** of health leadership,
- **Low levels of use or understanding** of the PHC performance dashboard,
- The dashboard being **difficult to interpret** or visually unappealing,
- Fragmentation of data systems meaning that some countries had **multiple, separate dashboards** for different performance areas, making a comprehensive synthesis of performance difficult, and
- Limited functionality to get 'under the hood' of the data, for example to **drill down into certain metrics**, filter, and benchmark facilities against each other.

Several countries also noted that data quality was poor, partly because those reporting it rarely had access to it in a useful form. Their hope was that by promoting the use of a well-designed dashboard, they would indirectly improve the accuracy and timeliness of their performance data.

Thus, while there were many different ambitions for *how* each country wanted to improve its PHC dashboard, there was strong agreement on the importance that an effective dashboard can make for performance management.

PHC Performance Dashboards are used to...

Translate data into simple, actionable visuals

Track and compare performance

Role-specific access and features for specific users

Drill-down, filter, and cross-compare analyze performance issues

Communicate priority targets and objectives across the health system

Support data-driven decision making

Hold providers to account

Recognize trends and potential failures more quickly

Monitor performance against targets

... and more

Preparation Phase

Introduction

All countries pointed to **a sound preparation phase as the essential foundation of any dashboard redesign process**, as dashboards can have so many functionalities and serve so many different user groups - but rarely can they be 'all things to all people'. Prioritization and a strong understanding of what different stakeholders need from the dashboard are an important first step. This section contains **four key tools** produced by the collaborative's participants in the process of supporting real-world dashboard redesigns in the implementer countries, adapted subsequently as global goods for use in any PHC context:

1. A **maturity matrix** showing generic functionality of a PHC dashboard across multiple dimensions. This can be used as an overall 'stress test' of an existing dashboard to understand where it is strong, and where could improve
2. A **checklist for dashboard redesign planning** offering a template for the key requirements and stages to think about before embarking on a redesign process
3. A **stakeholder needs assessment tool** featuring two possible approaches and questions to use when consulting stakeholders to understand their future needs from any redesigned performance management dashboard.
4. **Guidance on key performance indicator selection**, i.e. which performance variables to feature in the dashboard

PHC Dashboard maturity matrix

This maturity matrix is intended as a **simple, self-administered evaluation of the current strengths and weaknesses of an existing legacy PHC performance management dashboard**. It brings together **multiple dimensions** on which a dashboard's functionality, features and user-friendliness can be judged, and separates each of these into **three maturity stages**. It was generated through multiple rounds of co-production by the collaborative's participants, as well as input from several external experts. The matrix was applied in practice by many of the participant countries, including the two implementation case countries - Mongolia and Nigeria - who **used it to inform the areas to prioritize for improvement** in their redesign process.

Dimensions	Basic (Score 1)	Intermediate (Score 3)	Advanced (Score 5)
Alignment with Strategic Goals	Busy screen full of indicators, with priority performance measures hard to find	Dashboard displays priority system KPIs, but minimal supporting data	Pressing systemic priorities are displayed most prominently, with ability to drill down into other performance data as needed
Ease of Access	Uses separate login details **and** a distinct website	Separate login **or** website	Portal uses existing login details and integrated with other systems users visit
Interoperability and Integration	Draws on one data source	Combines multiple data sources but presents them separately	Fully integrates and triangulates data sources into unified visualizations and analyses
Data Completeness and Timeliness	Data is incomplete **and** out of date	Data is incomplete **or** out of date	Data is complete, up to date, and in many cases near real-time
Data Visualization	Data displayed primarily as tables and raw numbers, requiring manual comparisons	Interactive bar and line charts allow trends over time and comparison with peers. Ability to change axes, colours and filter certain data in/out	Inclusion of trend lines and visual elements to show actual data vs target. More advanced filtering such as 'unstacking' an indicator area into components
Customizability	Static dashboard/ One-size-fits-all	Different types of users see different default dashboard layouts depending on role type/needs	In addition to default views, users can create and save custom views based on their individual needs
Decision Support	Data presented without interpretation or prompts	Visual prompts indicate areas where performance may have significantly changed	Prompts link to specific guidance related to that area, including potential actions
Ubiquitous	Not routinely accessed or used by key user groups	Routinely accessed, but only used for monitoring/ compliance	Use is routine and embedded into the decision-making and

Dimensions	Basic (Score 1)	Intermediate (Score 3)	Advanced (Score 5)
		purposes	improvement process for users across the system
Overall score			

Checklist for dashboard redesign planning

This checklist is a **practical, question-based self-assessment tool** for those embarking on a performance dashboard redesign to consider at the outset of their planning. It provides a template for teams to **understand the stages of the process** and what may be required to see this through to fruition - from **initial readiness, needs assessment, prototyping, piloting, rollout, and ongoing governance** for adoption and improvement.

1. **Readiness & Scope**
   - ☐ Is there a clear scope for the dashboard redesign, including an understanding of what services and which providers are included under 'primary care'?
   - ☐ Has a clear case for change been articulated?
   - ☐ Are external skills or additional training likely to be needed e.g. for platform design work or data integration, and have cost estimates been generated?
   - ☐ Has necessary senior level support/approval for the redesign been secured?
   - ☐ Have the current legacy dashboard(s) and other data systems been mapped to understand what exists already?
   - ☐ Have a budget, timeline, and governance (sponsor, product owner, data steward, designer, developer) been confirmed for the process?
2. **Users & Workflows**
   - ☐ Have the primary users for the new dashboard been agreed (e.g., facility manager, district M&E leads, MoH reviewers)?
   - ☐ Has a process for engaging with these stakeholders to consider their needs been designed?
   - ☐ Having consulted stakeholders, is there now a clear understanding of the different functions and views that different user groups require?
   - ☐ Is there a good understanding of what accessibility requirements some users may have e.g. language, device, low/no bandwidth needs?

3. **Indicators, KPIs & Definitions**
   - Has an indicator prioritization and selection process been agreed?
   - Are their precise operational definitions for each key indicator (numerator, denominator, inclusion/exclusion, period) ?
   - What disaggregations are required (facility, district, age/sex, rural/urban, etc.)?
   - What targets/benchmarks/thresholds will drive highlighted indicator status?
   - Does a data dictionary exist and who owns it?
4. **Data & Integration**
   - What are the data sources (EMR, DHIS2, eLMIS, HRIS, surveys) that need to be brought together within the dashboard - is this data refreshed sufficiently frequently?
   - Have the owners of key data sources been engaged to get their buy-in?
   - Are additional data quality checks needed (completeness, timeliness, accuracy) as well as processes to handle missing/late data?
   - Are master data (facility IDs, geocodes, denominators) verified and synchronized?
   - How will systems interoperate? Is work needed to prepare the data for this?
5. **Platform & IT Readiness**
   - Will the current dashboard platform be used or a new one selected (Power BI/Tableau/DHIS2/custom)?
   - Who has the skills to work with this platform, and is additional training required?
   - Do facilities have the necessary IT (devices, screen size, browsers, bandwidth) and export/print options (PDF/Excel)?
   - Are security and privacy requirements defined?
   - Where will the data be hosted, and what are the backup and disaster-recovery arrangements?
6. **Design & Prototyping**
   - Will prototyping be done in-house (if so, by who) or with external support?
   - What process will be followed to develop initial prototypes and iterate?
   - Have the key visual standards (colors for meaning, number formatting, maps, annotations) been agreed?
   - How will users access indicator definitions, metadata, and "last updated" information?
   - How will initial user testing of the prototype be done? Has sufficient time been left for incorporating these changes?
7. **Communication and Training**
   - Has a communications plan been created (who, what, when, channels)?
   - What training assets need to be prepared for piloting/launch (e.g. quick-start guide, short videos, indicator glossary)?
   - How will users get help if they need it (inc. out of office hours) and have support staff been prepared for this?
8. **Pilot, Rollout & Adoption**

- Which facilities will form the pilot cohort and what success metrics/feedback loops will be used?
- What is the staged rollout schedule and the rollback/contingency plan?
- How will adoption and usage be tracked(log-ins, time-to-insight, % facilities using monthly)?
- What other success metrics will be added for the full rollout?
- How will dashboards be embedded in routine meetings and action-item follow-up?

9. Sustain & Improve

- Who owns maintenance (refreshes, bug fixes, indicator updates) and what's the cadence?
- How will requests for new features or other changes be collected and prioritized?
- What is the ongoing review process (data issues, user feedback, usage analytics)?
- How will versioning and release notes be managed?

Stakeholder needs assessment tool

With so many potential stakeholders and different needs for a future dashboard, **a structured process to assess and prioritize users' views and requirements is important**. The following is a guideline to follow in determining the stages of this process. It describes two possible approaches developed by participants in the PHCPM collaborative: **a 'traditional' process of needs assessment via interviews and surveys**, and a **'participatory approach' or 'human centered design' process** in which users don't just state their needs but are **more actively engaged in helping to design the solution itself**. Both implementation case countries in this collaborative undertook these processes, which contributed valuable insights to inform their subsequent plans for dashboard redevelopment - as well as subsequent refinement of the tool.

Traditional Needs Assessment Approach

Phase 1: Deciding Which Stakeholders to Engage With

PHC performance dashboards can have many different users—each of whom have different needs and priorities—so the first stage in building your needs assessment for the new dashboard is to decide which stakeholders' views you wish to seek. The following is a long-list of potential stakeholders to select from, depending on which group's needs are the highest priority to address in any upgraded PHC performance dashboard:

- National/Regional Level Monitoring and Evaluation Staff;
- Local/Regional PHC Supervisors and Managers;
- Frontline PHC Workers;
- Clinic Managers/Supervisors;

- Senior Health System Decision-Makers and/or their advisors/teams;
- Statistics/IT Professionals within the MOH;
- MOH Policy and Planning Professionals;
- Regional/Local Government Officials;
- Private/Non-Profit PHC Providers;
- Provider Associations;
- Funders/Donors;
- Think Tanks/Academics; and
- Patient/Advocacy groups.

Depending on how many stakeholders you select and the available time, you may wish to think about mapping stakeholders' relationships and constructing a representative sample to engage with. In doing this, consider how you may wish to balance key features such as:

- A mix of locations across the country;
- A mix of high and low performers;
- Sector i.e. public, private, non-profit;
- Current level of engagement with data-driven decision-making; and
- Priorities/objectives when making decisions (e.g. profits, equity, quality, etc).

Phase 2: Selecting the Method(s) of Engagement

Having chosen the groups to focus on, you will need to decide what methods to use to engage with them. Each of these have pros and cons, and it may be that you decide to use a mix of methods, for example, interviews or a workshop for a small number of the most important stakeholders and a questionnaire to cover larger groups such as PHC supervisors across the county.

- **Focus groups**—Useful at achieving consensus across a small number of different stakeholders, as well as eliciting deeper responses through members prompting each other. Limited in terms of the sample size that can be reached as well as travel constraints if participants come from a wide geography.
- **Questionnaire—**Can capture a large sample of views in a short space of time, but expressed opinions may be less considered/detailed than other methods.
- **Interviews**—Produces detailed and considered responses that are easier to structure and explore different themes for different stakeholders, but are time consuming to organize and collect. Useful for the most critical stakeholders.

Phase 3: Choosing the Key Lines of Inquiry

Regardless of the mix of methods, you will next need to choose the questions you hope to address through your chosen approach. The following are given as a questionnaire-type format, but could easily be adapted to any of the other methods above:

1. Introductory preamble—state the purpose of your project, this may require you to describe what is meant by a 'PHC dashboard' (or show examples);
2. Preliminary data collection—Consider what data about the respondent(s) you wish to collect, including their name, title, organisation, location/region;

3. Which dashboards/resources are you currently aware of where you can access visualized data on the performance of PHC providers against a range of key performance indicators? *[Provide a list of the main dashboards already in use in your country, with fields 'Highly aware, somewhat aware, not aware, don't know'];*
4. Of those you are aware of, which do you currently use and how regularly? *[Provide the same list of dashboards answer fields 'use often, use occasionally, use rarely, do not use']*
5. Of those you use, what do you currently use them for? *[Free text answer];*
6. How easy do you find these dashboards to navigate and find information you need *[Very easy, somewhat easy, neither easy nor difficult, somewhat difficult, very difficult];*
7. Is there anything that would improve the usability of the dashboards? *[Free text answer];*
8. Are there things you would like to use the dashboards for which they do not currently allow? *[Free text answer];*
9. In designing a new dashboard to display PHC performance information, what key performance indicators would it be most useful for you to see? *[This question could have an open response or have closed options listing the existing KPIs in your system];*
10. Which of the following functionalities would be useful in a redesigned PHC performance dashboard? *[Very useful, somewhat useful, limited usefulness, not useful, don't know];*
    a. Ability to compare one facility against others;
    b. Ability to compare one region against others;
    c. Ability to compare trends over time;
    d. Ability to drill down from high-level graphics to detailed data;
    e. Ability for you to create a custom dashboards that is specific to your needs;
    f. Ability to prompt potential solutions and/or quality improvement tools to areas where performance is below standard;
    g. Ability to send you alerts when performance in an area significantly deviates from the norm/standard; and
    h. Ability to export data for further analysis.
11. Is there anything else you would like us to bear in mind when creating a new PHC performance dashboard?; and
12. Would you be willing to be involved in reviewing or testing early prototypes/pilots of the new dashboard later on in the project?

Phase 4: Analyzing the Data You Have Collected

Depending on the type of methods of engagement, several types of analyses can be undertaken (Kujala et al., 2022). It is important that analyses are rigorous but also result in concise and useful action items, as opposed to a lengthy report. Some types of analysis include:

- **Quantitative Analysis**: this is most helpful if a survey is conducted and can tell us priorities based on the average answer of respondents. Quantitative analysis can include:
    - Descriptive Statistics: Summarize the responses using measures such as means, medians, and percentages to identify trends, for example the percentage of respondents who find current dashboards "somewhat difficult" to navigate;

    - Cross-tabulation: Examine how responses vary across different respondent groups (e.g., by role, region, or frequency of dashboard use), for example, comparing how PHC supervisors in urban areas differ from those in rural areas in their awareness or use of dashboards; and
    - Statistical Analysis: If sample size permits, apply statistical techniques to identify significant differences between groups or correlations between variables.
- **Qualitative Analysis** gathered from interviews, workshops, or free-text survey responses, can provide rich insights that complement quantitative findings. These can include:
    - Thematic Analysis where you can code qualitative responses into themes, such as "usability challenges," "desired features," or "data accessibility issues";
    - Pattern Recognition: Identify recurring themes or issues mentioned by multiple respondents; and
    - Consensus Identification: When a workshop or focus group is conducted, during the discussion, you can document areas of agreement or disagreement among stakeholders.
- **Mixed-Methods** is the strongest analysis and uses both quantitative and qualitative findings to complement each other, such as using qualitative quotes from interviews to highlight issues shown in quantitative trends. For example, if many respondents find dashboards "somewhat difficult," qualitative responses can reveal specific usability challenges, such as "unclear labeling" or "lack of training."

Participatory or Human-Centered Design Approach

The participatory approach, often referred to as 'Human-centered design', is a method of problem solving that places the experiences and ideas of users at the centre, collaboratively working through stages of: understanding problems in their real-world context; identifying opportunities and ideas with potential users; and then co-designing prototypes to arrive at the best solutions. This can often be done by developing a working group, workshop or committee. It is a highly participatory design process that begins with the people that the designers want to create for and combines this with technical experts and professionals who can add their own skills and perspectives. It is unlike traditional needs assessment methods in that potential users are supported to play an equal and participatory part in each stage of the innovation process.

Typically, participatory, user-centered design processes take the form of one or more workshops in which potential users of a PHC performance dashboard—either representing a diversity of stakeholder groups (see above) or with separate workshops for each stakeholder group—are held. Using post-it notes and/or flip charts, participants are facilitated to note down and discuss their own experiences and ideas against three main areas in sequence:

1. *Understanding problems in their real-world context*—What are the main performance issues that the users face in their jobs? When and how do the users currently access and use data to understand and solve these performance issues? How does the current data set up help or hinder their ability to solve performance issues?

2. *Identifying opportunities and ideas with potential users*—In an ideal scenario, how would an improved dashboard allow them to better understand and solve performance issues? How would this dashboard work and how would they and others in the system use it?
3. *Co-designing prototypes to arrive at the best solutions*—What would a prototype for this ideal dashboard look like?

Following these workshops, the technical professionals in the workshop would construct some basic prototypes for the dashboards that the users created. These would then be shown to the users to receive their feedback before being refined further, gradually working through a product development process to create the final dashboard.

Guidance on Key Performance Indicator Selection

The following section and case studies give general guidance, principles and stages for selecting the indicators to go into the PHC dashboard, collating insights from external experts and the direct experience of several PHCPM collaborative members who have engaged in such a process.

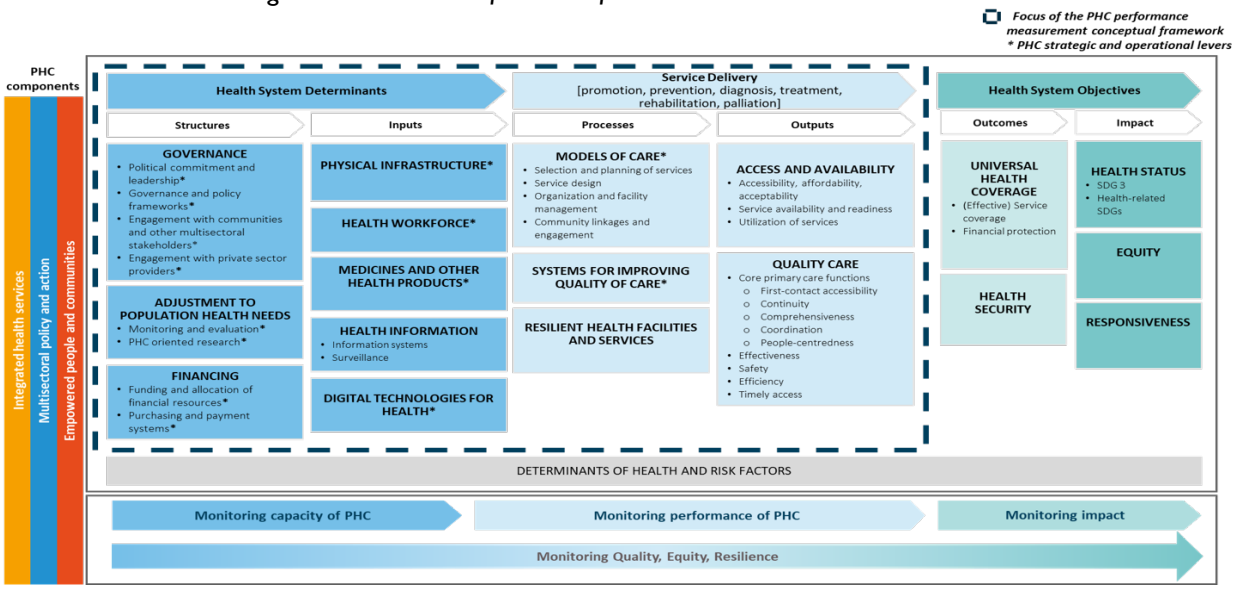
A critical stage in any dashboard redesign is selecting the key performance indicators to be displayed. This will usually be a subset of all performance indicators that the health system collects, as **while it might be tempting to include everything, this is likely to make the display and interface overwhelming**. Careful prioritization and selection of the indicators to feature is important to create a dashboard that supports stakeholders to move from information to action.

The previous stages outlined in this toolkit - in particular the stakeholder needs assessment - should have helped to guide what the main purposes of the new dashboard can be. For example, is it:

- To help **recognise and diagnose performance issues** that might be missed?
- To **enable comparison** between facilities or regions?
- To identify systemic trends and **monitor performance against targets**?
- To **highlight particular areas of performance** that require greater attention?
- To track whether **changes in processes are translating into better outputs/outcomes**?
- To **hold providers to account**?

Even with a clear understanding of the new dashboard's aims, **the task of selecting how many and which indicators to feature is challenging**. There is an almost overwhelming range of potential indicators that could be used for PHC, exemplified by the WHO-Unicef framework for PHC Performance Management (Figure 3), which lists **over 60 key indicators across 14 different domains** - in addition to other outcome measures, cross cutting PHC components and health determinants.

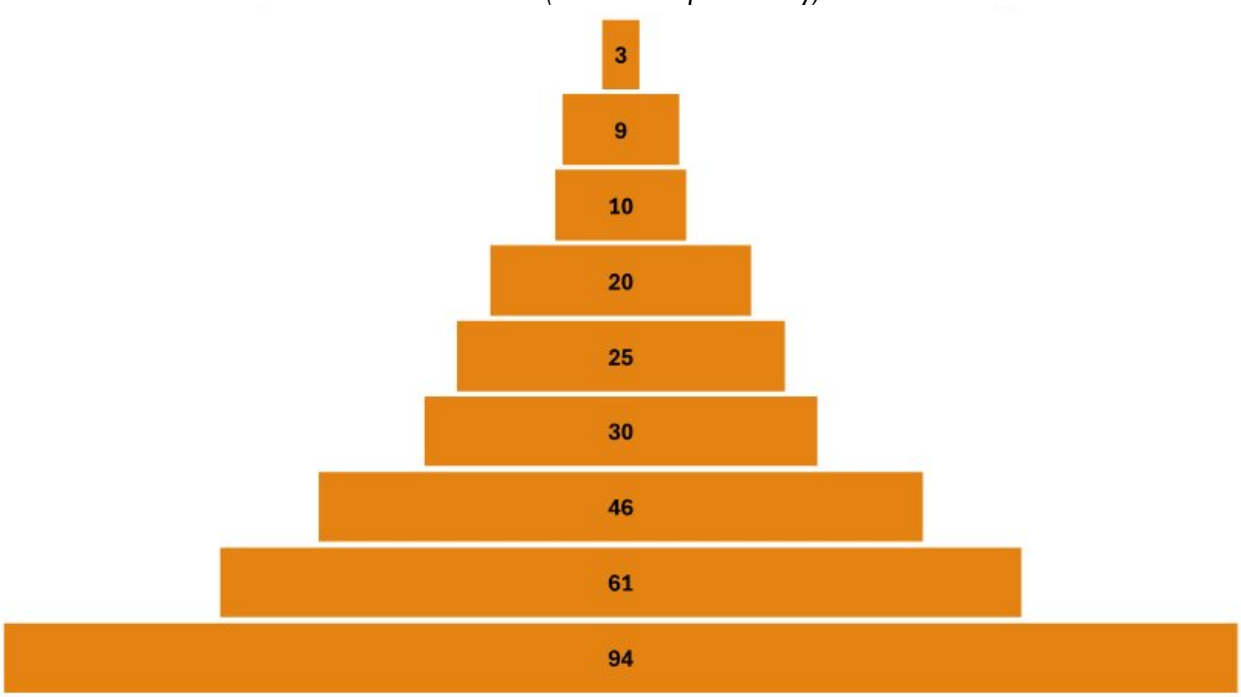
Figure 3: WHO-Unicef PHC Performance Measurement Framework



WHO and the United Nations Children's Fund (UNICEF), 2022

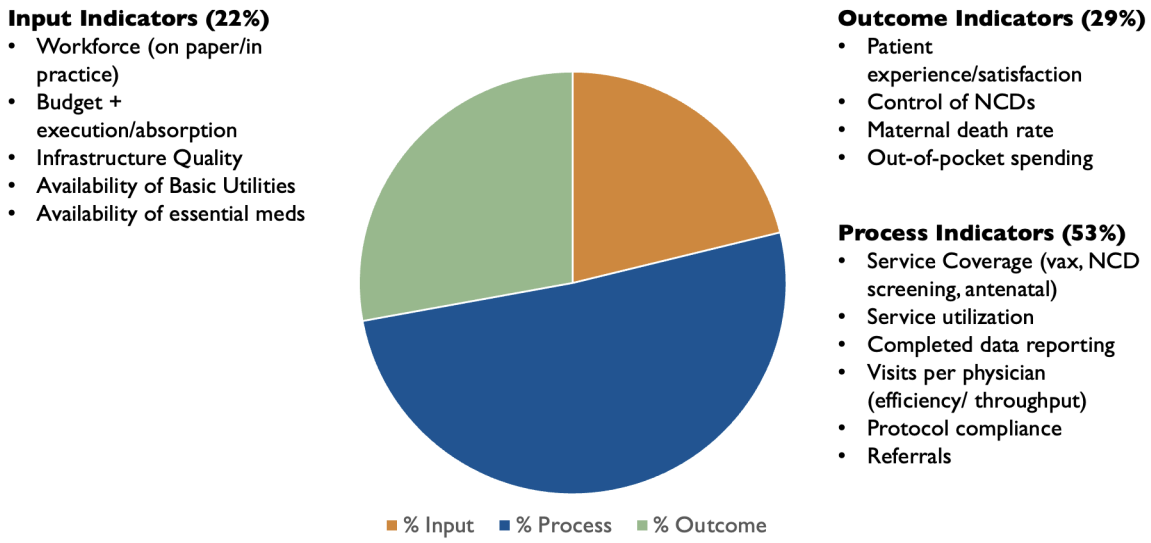
Unsurprisingly, countries in the PHCPM Learning Collaborative showed a wide variation in the number of indicators displayed in their current PHC dashboards (See Figure 4): from **some with fewer than a dozen measures** - prioritizing focus on a small number of critical priorities - **to some with almost a hundred** - functioning more as an analytics platform for all possible data sources on PHC.

Figure 4: Participant survey responses to how many indicators are featured in the main PHC performance dashboard (one answer per country)



Regardless of the number, a more consistent pattern was observed in the *types* of indicators featured in countries' PHC dashboard. **For most countries, the majority of their featured KPIs were process indicators** - such as service coverage and utilization, referral rates and protocol compliance (See Figure 5). This is because these are likely to be more easily influenced by facility level factors in the short term - and hence more useful from a performance management perspective. Lower income countries in the collaborative tended to have a larger number of input indicators - such as workforce, physical infrastructure and utilities - recognising that often these issues needed addressing first - while **middle- and upper-income countries tended to have a larger number of outcome-related measures**, such as patient satisfaction and risk factor control across the population.

Figure 5: Prioritized indicators for PHC dashboard by type: responses from survey of PHCPM-LC countries



Participants were also asked to prioritize and list the top three indicators they used most often for performance management purposes under each category. There was a high degree of overlap in their responses, which are listed in bullets under each of the headings in Figure 5.

Process to prioritize and select PHC performance measures

Multiple countries shared their experiences of prioritizing indicators for dashboard selection during the course of the collaborative. While there were minor differences in method, all followed a broadly similar systematic process to achieve their final shortlist of measures. This process tended to have six successive phases:

1. **Define dashboard goals:** This involves understanding the purpose of the dashboard, who the users will be and what levels it needs to display performance for (facility, region etc) . This typically involves some form of stakeholder needs analysis and/or synthesis of key national health policy and strategy documents (see tools above).
2. **Global best practice measures:** A scan of the most commonly used international frameworks to understand the various elements of PHC performance, as well as lists of the most widely used performance indicators under each performance domain. This might include the widely-cited frameworks such as Vital Signs and the WHO-Unicef PHC Performance Measurement Framework, or comparators with regional peers or OECD exemplars.
3. **Listing currently available indicators and data sources:** Compiling a list of PHC performance indicators currently being measured through existing data sources in the country, including how up to date and comprehensive the data is.
4. **Cross-comparison:** Mapping the outputs of stages 1-3 against each other to understand:
    a. How well do current KPIs match our actual priorities for PHC performance

improvement?

   b. How well do national priority areas map against international frameworks? Are there important performance areas measured by other health systems that should be added?
   c. How well is each of the main national priority areas for performance covered by existing indicators?
   d. Where do gaps exist in the domestic indicator set, where additional measures may need to be drawn from global best practice?
   e. Where duplication exists, can some indicators be combined or removed?

5. **Indicator finalization:** The resulting long-list of indicators produced is filtered down using a set of assessment criteria, which may include:
   a. The timeliness and completeness of the data
   b. The feasibility of collecting data for any new indicators
   c. Whether the indicator is commonly used by other countries, enabling cross-country comparisons
   d. Selecting indicators that are SMART and will be most meaningful to the dashboards key intended users
   e. Ideally, measures which are difficult for providers to 'game'
6. **Stakeholder consultation:** The final list of proposed measures is then shared with key stakeholders for feedback and refinements, including providers, senior decision-makers, medical associations, government health agencies and other relevant groups.

Box 1:

Case Study: Refining a district level primary health care (PHC) performance framework in India

Krishna D. Rao, Professor, Johns Hopkins Bloomberg School of Public Health
Akriti Mehta, PhD, Senior Public Health Specialist, IPSI and Associate, Johns Hopkins Bloomberg School of Public Health
Harsha Joshi, MSc., Program Officer - India Primary Health Care Support Initiative (IPSI)

In 2018, India launched a landmark national primary health care (PHC) reform to upgrade over 150,000 public sector PHC facilities across the country into 'Health and Wellness Centers' that would offer improved quality and an expanded service package. To support district level planning and decision making, there was an imperative to introduce more data-driven approaches to managing PHC.

At the time, the country had a proliferation of different portals, dashboards and performance monitoring frameworks managed by different institutions and programs - many of them focussed on single diseases and with overlapping indicators and little interoperability. To address these challenges, our team from Johns Hopkins Bloomberg School of Public Health and partners aimed to develop a unified PHC performance framework and indicator set at the district level. The specifically goals of the

framework were to:

- Measure PHC performance of districts over time
- Enable comparative analysis of PHC performance across districts
- Identify high and low performing districts
- Identify areas of PHC performance that needed attention

After an initial Conceptualization phase in which we mapped user needs and constraints, and agreed upon the purpose of the future framework, we began the indicator selection process by creating two inventories of indicators: one of international measures and frameworks, and one of domestic ones. These were mapped against each other, with duplicative measures removed and the remaining measures assessed against a set of inclusion criteria. The resulting list of 60 'ideal' indicators was mapped against the key performance domains that mattered most in the Indian context, with gaps (where there were no existing indicators for a particular sub-domain) filled using population-based survey data. Feasibility of measurement across all districts was then assessed, at the same time as stakeholder consultation meetings to receive feedback. This resulted in a final list of 35 indicators categorised under three performance domains:

- Capacity: 12 indicators, including measures for facility quality, medicines availability and information systems.
- Service Delivery: 14 indicators, including measures for child, antenatal and NCD service coverage.
- Impact: 9 indicators, including population level measures for maternal health, communicable and non-communicable disease outcomes.

Capacity (n=12)
Structures (4) 1) PHC financing 2) Information systems
Inputs (2) 1) Medicines and diagnostics
Community engagement (4) 1) Community linkages
Quality assurance (2) 1) Facility QA standards

Service Delivery (n=14)
1) Family Planning, Reproductive Health, Pregnancy, and Childbirth (4) 2) Neonatal, Infant, Child, and Adolescent Health (3) 3) General Outpatient (2) 4) Non-Communicable Diseases (5)

Impact (n=9)
1) Reproductive, Maternal, and Child Health (2) 2) Communicable Disease (3) 3) Non-Communicable Diseases (4)

Some of the key lessons from this process were to minimize wherever possible creating additional data collection work for the health system actors, select indicators that will produce a fair comparison across districts of varying size and income, consult key stakeholders throughout the process, and ensure that the final framework represents national priorities first and foremost (IPSI, 2024).

Box 2:

Implementer country case study: Streamlining performance measures for PHC providers in Mongolia

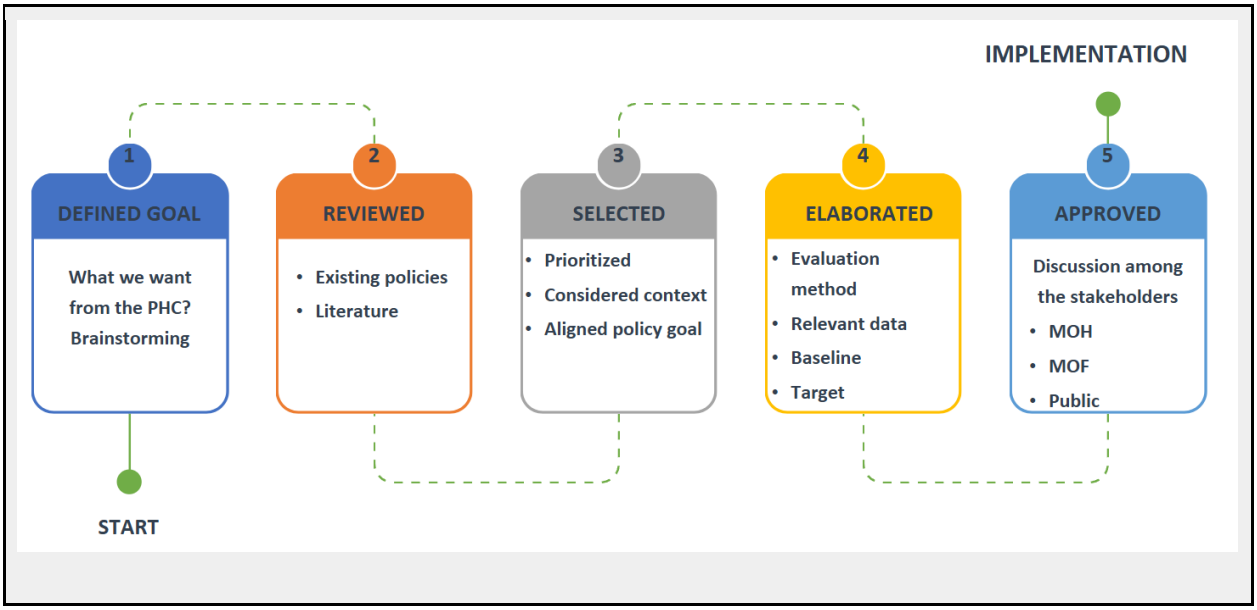
Bulgantamir Bulgaa, Senior Officer, Health Benefits Package Division, Health Insurance General Authority (HIGA)
Delgerekh Sainjargal, Advisor, Health Insurance General Authority (HIGA)

Mongolia's challenge with indicator selection was different to that of India (see Box 1), but nonetheless a similar process was followed. The goal was to select a subset of indicators for the national Health Insurance General Agency - HIGA - to attach financial rewards to, meaning the list would have to be more limited than most international PHC performance frameworks (more than a dozen indicators was thought to be too confusing for providers to navigate), and each indicator would also need specific targets or thresholds at which money would be paid out. This short list of payment-for-performance indicators would also be displayed on a dashboard available to HIGA and its contracted public and private facilities.

The process started in 2019 with an existing national PHC indicator set of 57 measures, which were linked to five percent of PHC providers' capitation income. This list was then narrowed down initially to 14 and eventually to 9 indicators using the following five stages:

1. Brainstorming with HIGA and other stakeholders about what the goals for PHC performance improvement should be, resulting in a set of priority issues
2. Reviewing global literature and existing policies to better understand current and international best practice regarding PHC performance measurement
3. Select the priority indicators from the available 57 that best match the ultimate priority goals, as well as other evaluation criteria such as the data being complete, being comparable and not easily 'gamed'
4. Elaborated the precise indicator definitions and calculation methods, data sources, baselines and targets, so there could be no confusion or misinterpretation of each metric
5. A final round of formal discussions with the Ministry of Health, Ministry of Finance and other stakeholders, and approval by the National Health Insurance Council.

Following implementation in 2023 (with an initial phase of 14 indicators in 2021) HIGA saw a rapid improvement in the selected measures, suggesting providers had taken note of the new financial incentives and were responding. Although, the rate of improvement was so rapid that some suspicions were raised of possible gaming or 'target tunnel vision' by providers, leading to an ongoing discussion - as happens in all mature health systems - over gradual evolution and adjustment to the indicators that are needed in future.



Design Phase

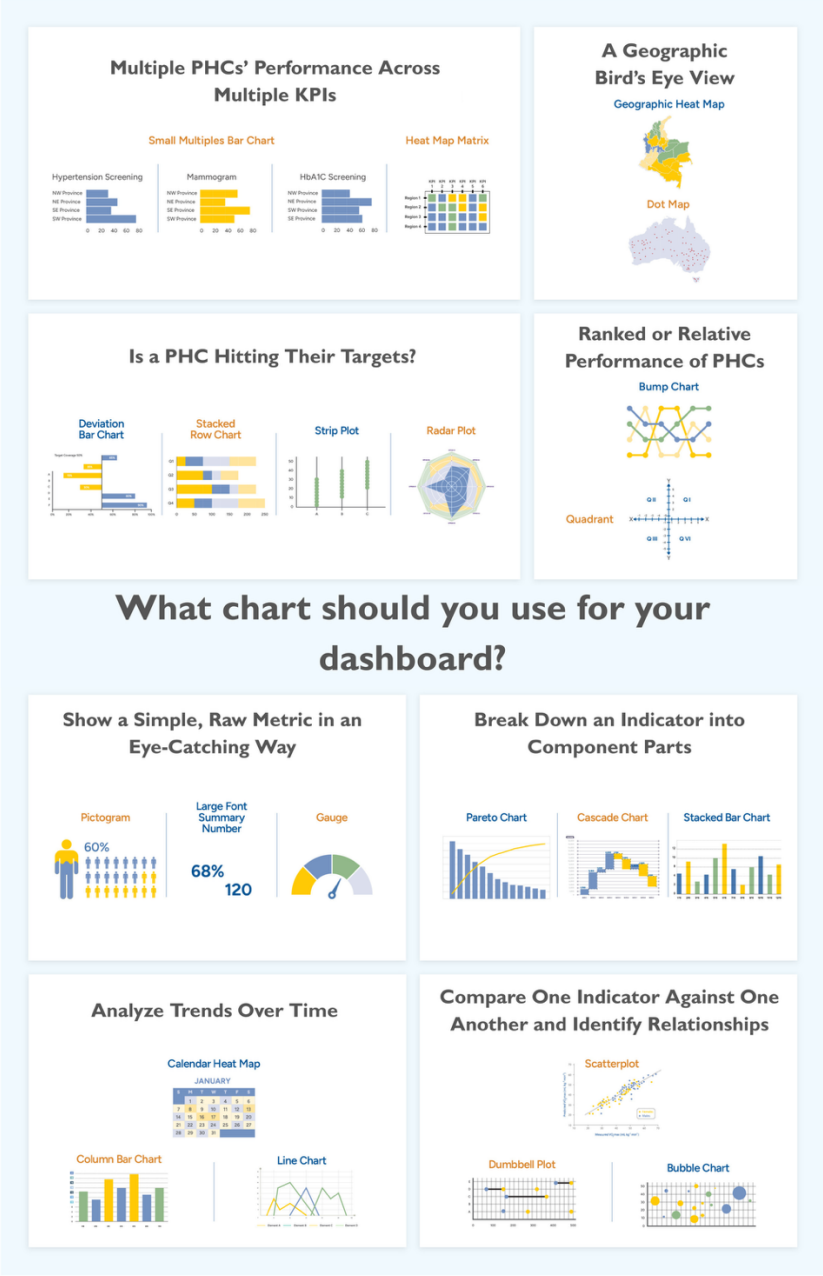
Having completed the necessary preparations, the design phase can begin in which the visual appearance and functionality of the dashboard is decided. This can be a participatory process involving many users working together on prototypes with specialist IT developers, or a more structured effort of responding to the requirements identified in the user needs assessment, with feedback sought on a full prototype after. In supporting the implementation case countries, three tools were developed as part of this toolkit to support countries throughout this phase:

- **Data visualization selection tool**: An infographic to select the most appropriate chart style, adapted to the specific needs of PHC performance management
- **Tips and tricks for better charts and dashboards**: Best practice and other key insights from healthcare data visualization expert Katherine Rowell.
- **Guidance on dashboard platform selection**: A table to help choose the visualization platform that the dashboard will be built using, comparing the most common products globally against a number of relevant domains such as cost, functionality, ease of use and the number of languages supported

Data Visualization Selection Tool

While there are many tools online to help those visualizing data to decide which chart style is right for

different purposes, these are typically generic: classifying chart types into categories that are not immediately applicable to PHC service leaders. Recognising this, participants in the collaborative wanted to create a new, plain-english taxonomy that was tailor-made for the purposes of PHC performance management. The resulting tool brings together their collective insights to give **a practical, shareable infographic to help navigate choices over what chart styles to use within a dashboard**.



Tips and Tricks for Data Visualization

The visual design of a performance dashboard is one of the most critical elements to its success. Even with all of the previous stages completed correctly – the right indicators selected, the necessary functionality understood, the correct chart styles chosen etc – **a dashboard that is visually confusing or unappealing will struggle to be adopted into regular use**.

As healthcare service leaders, we often have some understanding of what a good – or bad – dashboard looks like, but articulating why and the rules to follow is difficult. For this reason, the collaborative looked to **an expert in the field of health data visualization**, Katherine Rowell, Founder of HealthDataViz and author of the book *Visualizing Health and Healthcare Data*. She shared some of her experience of best practice as well as coaching and critiquing screenshots of various participating country dashboards to demonstrate these. The following are some of the insights and takeaways that the group found most valuable in doing their own dashboard designs.

Key lessons from Katherine Rowell, author of *Visualizing Health and Healthcare Data*

- While many people consider dashboard design and data visualisation as intuitive, in reality it is a skill like any other that can be learned and developed through practice, and is grounded in a large body of empirical research about how our brains interpret visual information.
- Our brains only process a fraction – around 5 percent – of the information that is transmitted through our eyes. This filtering is not random but follows a number of patterns that determine where our attention goes. Much of this happens subconsciously in a split second. By understanding and exploiting these patterns, we can use visual tools – in particular colour, form and spatial position – to make it more likely that data is easy to interpret and holds the viewer's attention and be correctly interpreted.
- The initial impression of a dashboard or chart we see matters a great deal. Average human attention spans are less than 10 seconds – meaning a dashboard must be both visually appealing and easy to understand at a glance, especially for less data-literate audiences.
- Accessibility is another consideration that is often overlooked. For example, many dashboards feature 'traffic light' color palettes, yet around 10 percent of people are red-green colorblind, meaning they won't be able to see these differences. Text should be horizontal wherever possible and in a large enough font to read. There are many resources online to better understand accessible displays for screens, as well as colorblind-friendly palettes, for example https://www.section508.gov/create/

Understanding the good and the bad in visualizing multi-variate data

Figure 7: An example of poor multi-variate data visualization

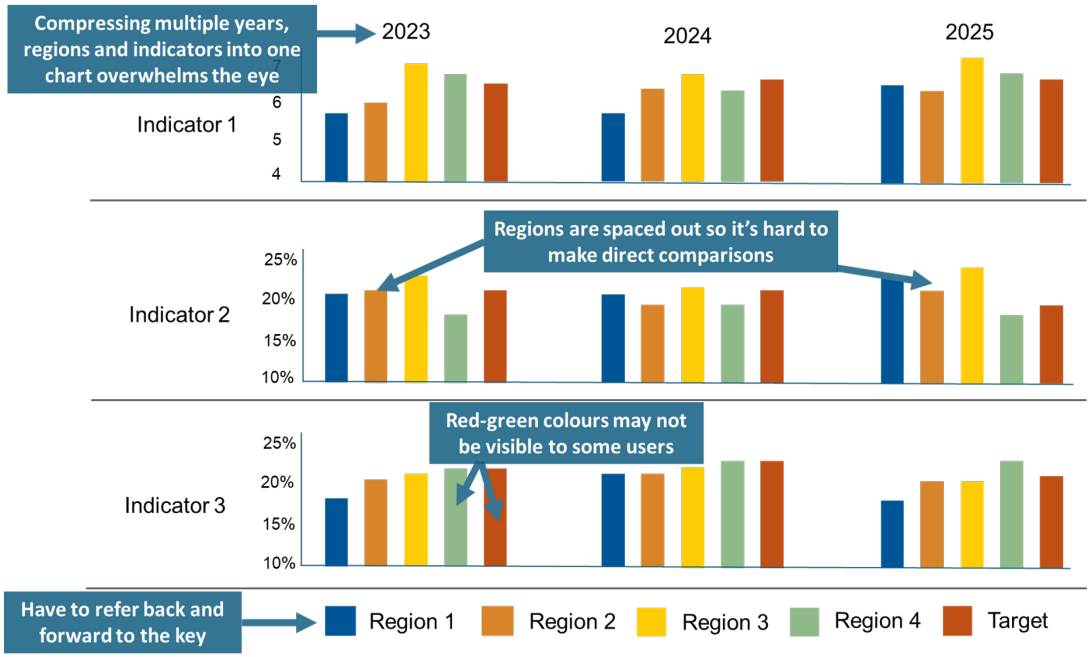
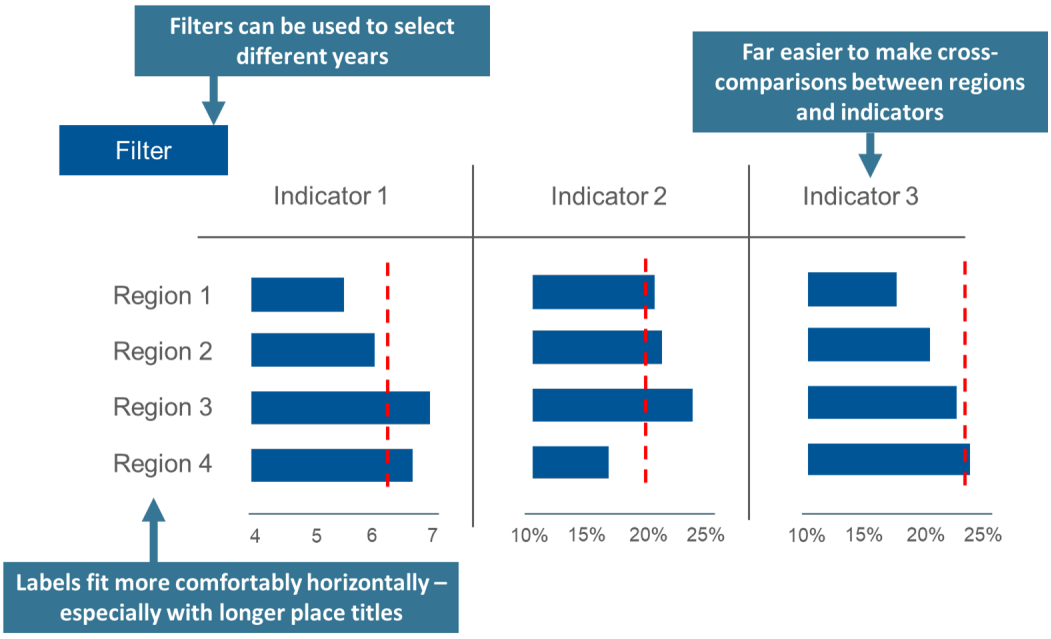


Figure 8: An example of good multi-variate data visualization



Four foundational shapes

Katherine describes four 'foundational shapes' that, if they are mastered, will give those visualizing health data the majority of the tools they'll need to do it competently as part of a dashboard design. These are bar, line, point and box charts. Some of the key lessons shared in her book *Visualizing Health and Healthcare Data* for each of these foundation shapes include:

1. **Bar charts:** This "workhorse" of data visualization is good for ranking data, making comparisons, showing distributions and deviations. Good practices for bar charts include:

- Ensuring that the axis starts at zero
- Ordering the bars by size (unless there is some other important pattern it is important to highlight)
- Orienting the bars horizontally, as this gives much more space to label each bar in full and legibly.
- Placing lines across the bars to indicate targets or thresholds, if relevant
- Using 'small multiple' bar charts when there are multiple indicators to compare across a range of categories (e.g. several KPIs for a number of different regions or clinics)
- When doing 'stacked bar charts' to compare proportions between categories, dividing each bar into 2-3 variables is good, but beyond that becomes hard to interpret
- Consider eliminating the numerical axis, and instead putting their actual value on the end of each bar – the reader still gets the sense of proportion as well as the actual numbers

2. **Line charts:** These are particularly suited to tracking trends over time, as well as relationships between one variable or indicator and another. Good practices for bar charts include:

- Setting a scale for the axis that produces a 'lumpy' line – the aim is for a line that is neither so flat you can't see change, nor so spiky that it masks the trend.
- Line chart scales do not need to start at zero, unlike bar charts.
- Several lines can be overlaid on the same chart, but more than four gets confusing
- Consider cumulative line charts where a provider is building towards a total target over time, for example, the number of people contacted for a screening campaign
- Line charts can also be used to show changes in rankings (e.g. of a group of providers) over time, known as a 'bump chart'
- Another useful variant of the line chart for performance monitoring is to have a central horizontal axis that represents a target or average performance, and then a line going above and/or below this to represent a provider's actual performance against this.

3. **Point charts:** These are best used for comparing two variables or indicators against each other, often with additional variables represented by the size, colour or shape used for each point. For example, a scatterplot might show NCD screening coverage on one axis and the size of the catchment area on another, with whether the facility is public or private indicated by the colour of the dots. Point charts may more typically be associated with dashboards used for statistical analysis

rather than quick performance overviews. Good practices include:

- A line of best fit or trend line often helps the viewer to interpret the points
- Where multiple points are bunched together or on top of one another, make them partially transparent or unfilled so that all points can still be seen
- Where it is useful to display multiple providers against several indicators, 'strip plots' can be used to separate each indicator into a separate column, and then have a point on each column representing each of the providers
- Another variant of the point chart often used for performance monitoring is quadrant charts, where each axis of the chart is divided in half (high/low), producing four boxes that enables providers to be separated into performance quartiles
- Point charts can also be used in combination with maps to display information against a geographic area using the colour, size or shape of the point

4. **Box charts:** Often used for more statistically literate audiences, box charts are an option for situations where it is important to show the distribution of performance across a variable, or to 'get under the hood' of a particular indicator. A key form of these is the box and whisker chart, which simultaneously shows the average, upper/lower quartiles and the minimum/maximum values for a particular variable. A simpler form is the classic numerical table, which can be made more visually comprehensible by color-coding values (e.g. to quartiles) so that patterns can quickly be identified or draw the eye to areas that are below target.

Consolidating Visualizations into a Single Dashboard View

In addition to getting the individual charts of a dashboard correct, it is also important to combine them into a dashboard in a user-friendly way. Key elements of best practice to follow here include:

· Consider how users in your context will first scan the dashboard. For example, Western readers typically glance first from the top left to the top right and then look down in a Z-pattern, whereas in Arabic-speaking cultures this is often top-right to top left in an S-shape. Generally speaking, try to order the information from the most important and/or high-level summary charts/figures at the top, the key supporting charts giving more information on those summaries in the middle, and more granular or less critical information along the bottom of the dashboard.

· Try to give some variation in the style of visualizations used – an entire screen of bar charts can be hard to navigate. However, ensuring consistency across chart styles is also helpful. For example, use consistent colors for the same indicators across different charts.

· Try to group related charts together

· If users require different levels of granularity or have different information needs, use filters and tabs so that they can drill down into more detail if they wish. Common dashboard filters for PHC performance management might be facility, region, indicator and a flexible 'from-to' date range

for the data.

· Wherever possible, figures and charts should be compared to something, such as a target, benchmark or trend, rather than just giving raw numbers

· Don't feel you need to cram information into every inch of the dashboard – there is nothing wrong with having some white-space

Guidance on Platforms

Selecting the right platform is a critical step in ensuring that dashboards are not only visually appealing but also practical, sustainable, and secure. While most primary healthcare performance management units will already have access to certain tools through their organization (e.g., DHIS2 for national health information systems), it is important to understand the relative strengths and weaknesses of each option in case a change of platforms would yield gains during redesign. The following guidance note shares some **key comparative information and advice to guide the decision over which platform to build any new dashboard from**.

Different platforms vary in cost, functionality, ease of use, and technical requirements. Some offer powerful analytics and elegant visuals but require advanced training and expensive fees. Some are free or open source but demand more technical support to set up and maintain. Additional considerations include how quickly data can be refreshed, whether the tool works offline or on mobile devices. Finally, most tools have some level of AI integration to support more efficient workflows, but the extent of AI integration varies.

This section provides a high-level comparison of widely used dashboard platforms — including commercial tools (e.g., Power BI, Tableau, Looker, Qlik Sense), open-source options (e.g., DHIS2, Apache Superset, Grafana, Metabase), and lighter alternatives (Excel/Sheets). It is important to note that with the rapid advancements in artificial intelligence (AI) and machine learning, the dashboard and business intelligence landscape is evolving quickly. New platforms are being designed and platforms are integrating AI-driven analytics, automated insights, and natural language querying. Table 1 reflects the state of platforms as of February 2026.

Table 1: Comparison of Platforms

Platform	Cost / Licensing	Functionality / Visual & Analytical Power	Learning Curve / Ease of Use	Language / Localization Support	Data Security & Deployment Options
Enterprise					
Power BI (Microsoft)	$14-$24 per user per month Often bundled with MS enterprise licenses.	Strong engine, AI-driven insights, good visuals, natural language queries. Deep integration with Excel, Teams, Azure.	Advanced features require training.	Supports all languages	Can be hosted on secure cloud or own cloud/premises
ThoughtSpot Agentic Analytics Platform	Starting $50 per user / per month	Agents to automate every stage of the analytics workflow	User-friendly with easy prompting. Some advanced customizations may need coding.	Supports 4 languages only	Secure cloud; HIPAA compliant.
Tableau	$1380 + $75-$115 per user per month	Best-in-class interactive visuals, advanced analytics, strong geospatial mapping, extensible with R/Python. AI-assistant for analytics and visualization.	Steep learning curve, especially for advanced dashboards.	Supports all languages	Can be hosted on secure cloud or own cloud/premises

Qlik Sense	$200 - $2750 per month for all users	Combines powerful visual analytics with an associative data engine, enabling dynamic dashboards that reveal hidden relationships and insights in real time	Steep learning curve	Supports 15 languages only	Can be hosted on secure cloud or own cloud/premises
Open Source					
DHIS2 (open source)	Free Open Source	Moderate analytics/visuals. Very limited customization.	Accessible; requires basic training for staff.	Supports all languages; Community-driven translations.	Self-hosted, cloud optional.
Looker (Google Cloud)	Free Open Source	Strong semantic data modeling; embedded analytics, powerful visual options but limited customization	Accessible; LookML requires strong technical skills.	Supports all languages;	Cloud only.
Metabase	Free Open Source	Simple charts and dashboards, connectors to all major databases, Unable to handle complex queries or high data volume	Accessible and beginner friendly	Cloud versions are unavailable in some areas. Available in 34 languages (mostly European-centered)	Can be hosted in an independent cloud, data in transit is encrypted.

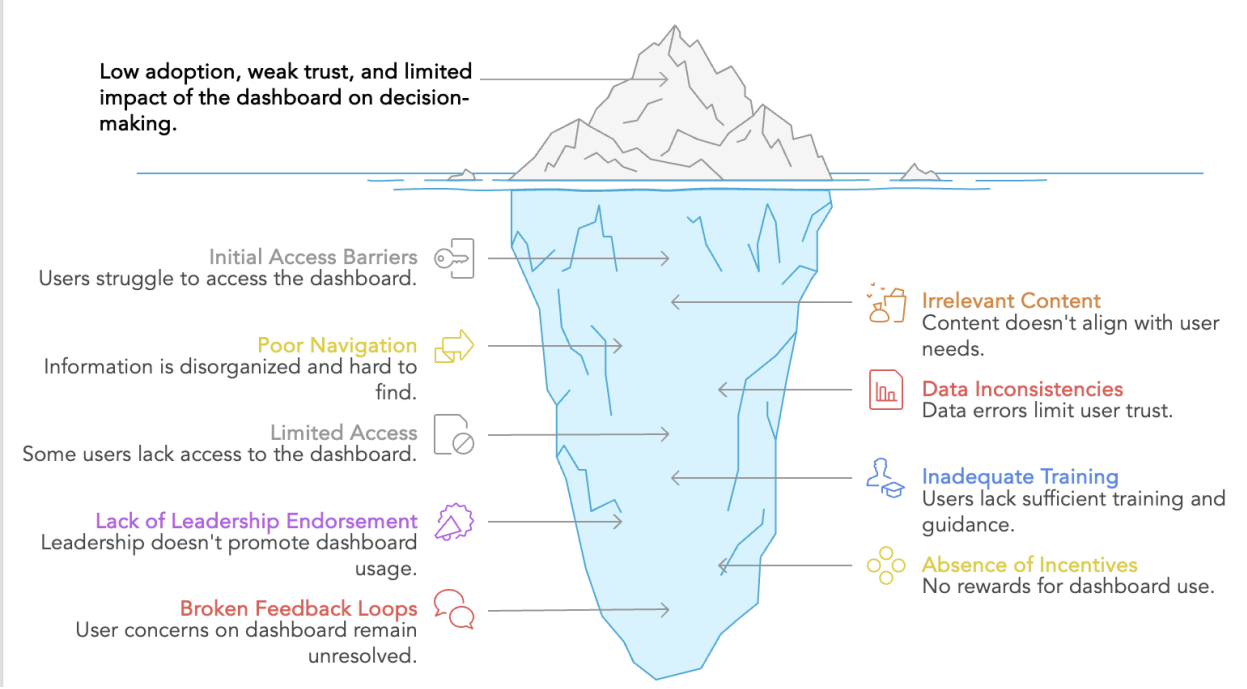
Apache Superset	Free Open Source	Dozens of pre-installed visualization options, option for customizable visualizations.	No coding required, but users indicate a somewhat steep learning curve; requires SQL knowledge	Offers 14 languages only	Extensive security features; uses authentication, user roles, management, etc. Offers both secure cloud and premises options
Grafana	Free Open Source Enterprise option available	Pre-installed visual options; different UI themes; Integration with a range of data sources	Appears to be labor intensive with a larger learning curve	Available in 19 languages, including some LMIC-heavy languages; tech support seems sparse.	Can be hosted on Grafana Cloud or self-managed with Grafana Enterprise Stack
"Lighter Options"					
Excel	Low cost (often already owned)	Basic charting, pivot tables, Power Query add-ons; limited interactive dashboards. Integrated with Copilot to allow for AI support.	Universally known with some more advanced features requiring basic training	Extensive localization; supports all languages.	Desktop + cloud (OneDrive).
Google Sheets	Free / low cost (part of Google Workspace).	Basic charting, collaborative functions, lightweight add-ons. Integrated with Gemini to allow for AI support	Intuitive and easy	Supports 100+ languages.	Cloud only; secure

Implementation Phase

Ensuring Dashboard Use Checklist

Many organizations have the experience of designing beautiful dashboards, only to see them rarely if ever accessed by the intended users: resulting in minimal impact. Drawing together the experiences of this collaborative's participants, the following infographic summarizes some of the **major barriers to dashboard uptake**, while the practical stage-by-stage checklist offers a **menu of ideas and inspiration for how to overcome these and maximize engagement** and use of any new performance dashboard.

Figure 6: Barriers to PHC dashboard adoption and use



Design / Pilot Phase:

There are many features and aspects of the dashboard itself that will encourage – or discourage – regular use. While not the primary focus of the checklist – since most points are covered in previous

sections of this Toolkit – some of the most important design considerations to remember include:

- **Understanding of status quo:** Taking the time to understand potential users' motivations, what legacy systems already exist and where these are strong/weak will help to shape the 'why' for different user groups.
- **Prioritized indicator selection:** Choosing indicators that matter most to potential users, from both a clinical quality and performance management perspective.
- **Profile-specific views:** Offering differing 'views' depending on the user type (e.g. clinic, regional manager etc) and their specific needs
- **Intuitive design and navigation:** User friendly design that is easy for users to instantaneously interpret with minimal statistical skills
- **Compatibility with different devices**, including mobile if possible
- **No new links or logins:** Seamless integration into existing platforms that users already access, or if not possible then using the same login details from other existing platforms
- **Resources to turn analysis into insights:** Connecting the data displayed with practical resources that they can use to improve areas of low performance
- **IT-readiness:** Ensure that potential users have the necessary IT equipment to access the dashboard

Rollout phase:

Having a strong communications plan around the rollout is important to ensure that news of the dashboard cuts through the 'noise' of daily operations and other announcements, as well as other measures to make sure that users' first experience of the dashboard is a positive one. Actions to consider to achieve this include:

- **Have a positive story:** Frame the new dashboard as a tool that empowers providers to improve quality of care and target improvement efforts, not something that is primarily about top-down scrutiny or micro-management.
- **Build anticipation in advance:** Issue a trailer or other 'teaser' messages to prepare users for the upcoming launch.
- **Give the dashboard a memorable name:** Few people will find 'PHC performance dashboard' appealing as a name, so consider a catchy title or acronym that people can refer to it as.
- **Hold multiple events on the day of launch:** So that busy clinicians and managers can join one that fits their schedule. Make these inspirational rather than technical, and coordinate with individual communications so that people have all the details they need to immediately log in afterwards.
- **Offer short, asynchronous 'how to' training videos:** So that users understand how to log in and what the basic elements of the dashboard are.
- **Offer longer 'in depth' training videos:** For users who need more help, or want to use more advanced features. It may help to make these role-specific, e.g. 'advanced dashboard use

for clinic managers'.

- **Designate dashboard champions:** Identify enthusiastic users or those from a pilot group as points of contact to promote the dashboard's use among their peers and support making it part of their regular workflows. It may be worth giving these individuals more advanced training, such as an in-person workshop on the dashboard's features.
- **Easy access technical support:** Offer a phone number or email address that users having problems with the dashboard can access to resolve them.
- **Offer the opportunity to join a cohort of dashboard 'super-users':** This could be an online community sharing their experiences of early use of the dashboard, or grants for some users to invest in advanced data analysis skills.

Post rollout phase:

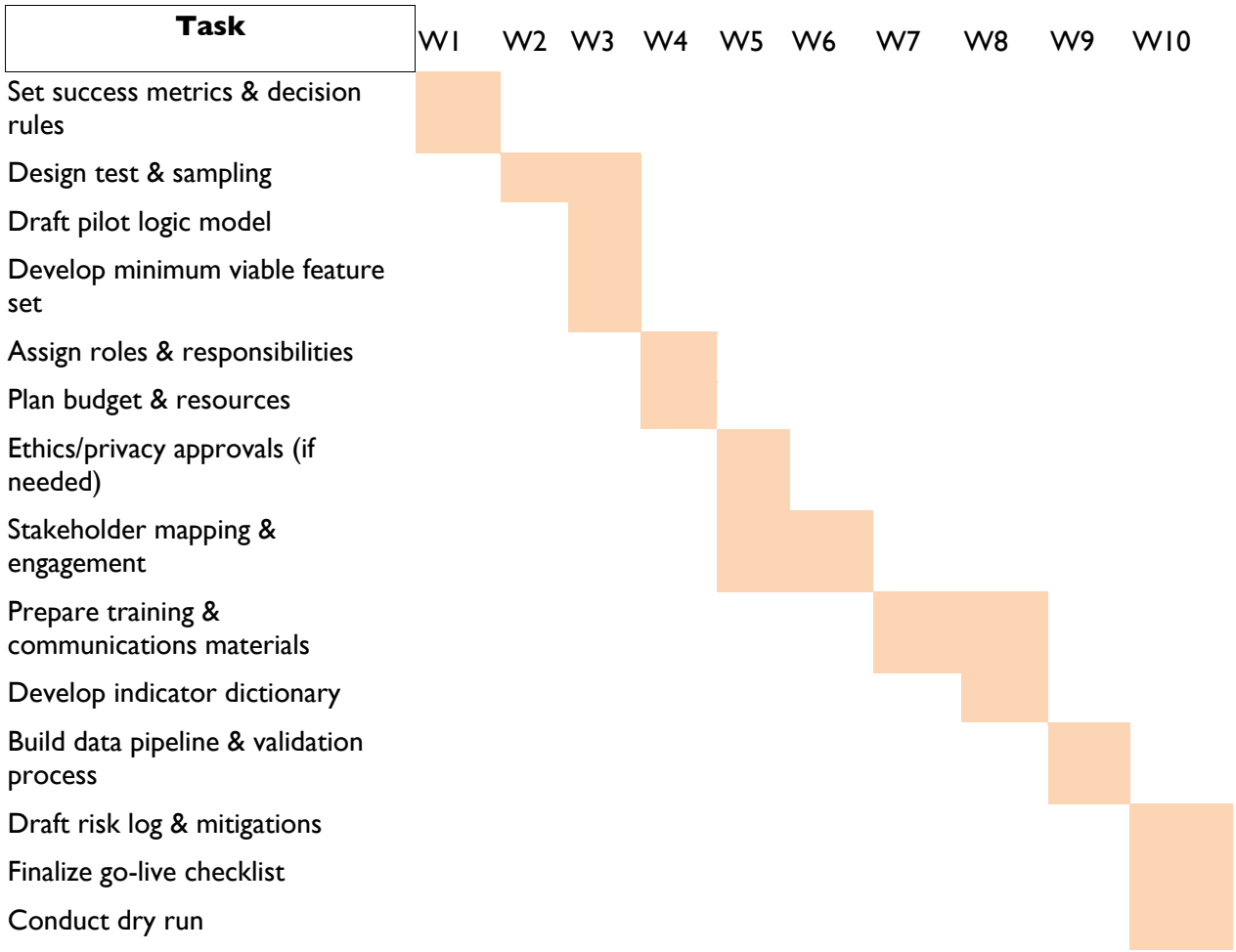
Regular follow-up, support and encouragement after the dashboard is launched is likely the most important aspect to ensure its use. Ideas to consider to maximize engagement during this post-launch phase include:

- **Track user access and use this to design targeted communications:** For example, different messages could be sent out to users who haven't accessed the dashboard after a month repeating the key launch information, to users who have accessed it once but not again sharing more insights on why it is useful, and to those who have started using it regularly asking for stories of what they have learned and how it has impacted their work.
- **Create a dashboard newsletter:** Sharing stories of the impact the dashboard is having, share new insights from analysis of the data, as well as changes that have been made in response to user feedback.
- **Allow use of the dashboard and its data by outside groups:** Depending on the types of data shared, a version of the dashboard could be made publicly available so that everyone can access it, or special logins be allowed for academic groups and think tanks. The more the data is used, the more seriously actors in the health system will take it.
- **Automated emails giving individual insights from the dashboard:** For example, showing a facility's comparative performance on a given metric each week
- **Ensure performance managers are using it regularly:** Build use of the dashboard into the workflow that performance managers use with their PHC providers, such as ensuring that they review performance using the dashboard at their regular meetings with clinics.
- **Ensure senior decision makers are using it regularly:** Include a standing item at senior-level weekly or monthly provider performance meetings at which one or more aspects of the dashboard is discussed. Create visuals from the dashboard that they can include in slide decks used to support their presentations.
- **Iterate the dashboard in response to user feedback:** Have a 'Send Feedback' function within the dashboard where users can make suggestions.
- **Publicly acknowledge and reward providers that have used the dashboard to make improvements:** Share stories of success and give recognition – whether reputation

or even financial – to providers who used insights from the dashboard to raise their performance. These can be published as case studies and referred to be leaders in presentations.

- **Require the dashboard to be displayed in facilities:** Whether these are hard copy poster-sized versions sent out to providers to display, or having a live version on screens where these are available, putting their performance in waiting rooms or other public areas will ensure providers are looking at it regularly and taking their performance seriously.
- **Have a clear monitoring and evaluation plan for the dashboard rollout** ideally including clear success metrics to track progress against.

Pre-Launch Pilot Gantt Template



Each step is explained below:

1. **Set success metrics & decision rules:** Decide how you will measure success and when to scale, adjust, or stop.

2. **Design test & sampling:** Choose where, with whom, and for how long the pilot will be tested.
3. **Draft pilot logic model:** Map how your inputs and actions will lead to the results you expect.
4. **Develop a minimum viable feature set:** Include only the essential elements needed to test your idea effectively.
5. **Assign roles & responsibilities:** Clearly state who is responsible for each task and decision.
6. **Plan budget & resources:** Estimate costs and make sure funds, tools, and staff are in place.
7. **Ethics/privacy approvals (if needed):** Get the necessary permissions to use data safely and ethically.
8. **Stakeholder mapping & engagement:** Identify and involve all people who will influence or be affected by the pilot.
9. **Prepare training & communications materials:** Create simple guides and messages to help users understand and use the pilot.
10. **Develop indicator dictionary:** Define each metric clearly, including its formula, source, and owner.
11. **Build data pipeline & validation process:** Set up how data will be collected, checked, and displayed accurately.
12. **Draft risk log & mitigations**: List possible problems and plan how to handle them early.
13. **Finalize go-live checklist:** Confirm that all systems, data, and people are ready before launch.
14. **Conduct dry run:** Test everything in a safe trial to fix issues before the real pilot begins.

Recommended Impact Measures

The following tool lists potential impact measures to consider during the pilot and/or rollout of a new dashboard, to track whether it is achieving the anticipated outcomes.

As part of the redesign process it is important to establish a set of measures to track whether the new dashboard has achieved the intended aims. Which measures best represent this will depend on the ultimate objectives of the new dashboard. In general, however, it may be helpful to think about **three main impact areas where a small number of measures will help to understand what difference the new dashboard is making: Adoption, User Experience and Performance** Each of these can be measured with a mix of data available from the back-end system of the dashboard platform itself, from tracking changes in provider behavior, and from asking users themselves what they think. Ideally, whichever indicators are chosen will be measured before and after the dashboard is redesigned, allowing a better understanding of the change before and after it was made.

1. **Adoption Measures**
    a. Access rate: % of users that have logged into the dashboard at least once
    b. Active user rate: % of users accessing the dashboard regularly (e.g. every week/month)
    c. Average duration: How long does the average user spend on the platform per month, or per session
    d. Trend over time: In the initial months since rollout, is usage increasing or decreasing?
    e. Key features: If platform analytics support this, you can look at which functions or features of the dashboard users are spending most time interacting with
    f. Re-run questions from *Stakeholder Needs Assessment Survey* (see above) on awareness of the dashboard, how frequently users feel the access it, and what they use it for. Have these changed or improved?
2. **User Experience Measures**
    a. Survey users on:
        i. Whether they feel they have a better understanding of their performance as a result of using the new dashboard
        ii. Whether they find it to be an improvement on previous systems
        iii. Whether the new dashboard makes finding information easier, or saves them time
    b. Record of logged IT issues related to the dashboard - e.g. not accessible or bugs
3. **Performance Measures**
    a. Survey users on whether they can share an example of having used the dashboard in a way that informed a decision or led to a change in performance
    b. Have there been any significant changes in performance - particularly the measures featured in the dashboard - since the dashboard was introduced, for example overall increase in target achievement, or low performing providers accelerating their improvement.

Making sure staff have the skills to use the new dashboard: Introducing the Hard Skills Training for PHC Performance Management

Even with a well-designed performance dashboard that is intuitive and meets users' needs, it may be necessary to invest in training to ensure that they are able to get the most out of the data and insights it provides. Across participating countries, sub-national PHC managers consistently identified gaps in practical competencies needed to translate routinely collected data into actionable management decisions. In response, the collaborative additionally supported the co-design of a structured, application-oriented capacity-building approach focused on essential hard skills for performance management, including basic IT proficiency, data analysis, data visualization, quality improvement, and the applied use of facility-level data.

The resulting hard-skills output combined modular training content with an embedded practicum model, requiring participants to apply newly acquired skills through mini-projects addressing concrete service delivery challenges, such as gaps in immunization coverage or antenatal care utilization. Pre- and post-

training assessments across pilot settings demonstrated substantial improvements in core competencies, particularly in data analysis, data visualization, and quality improvement.

To support enhancing managers' ability to utilize dashboards to their full potential- likely a much more significant undertaking than redesigning the dashboard - it may be helpful to explore the other set of outputs of this collaborative: *Designing a Hard Skills Training for Primary Care Performance Management*, which includes a standardized tool to assess training needs, a training curriculum for PHC managers and supervisors, session templates, facilitator guides, practical exercises, and monitoring and evaluation plans that countries can adapt to their own institutional contexts.

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