A playbook for designing human-centered health systems

March 2023

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Developed by:

Leapfrog *to* Value

In partnership with:

PERCEPT
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NOTES ON LANGUAGE AND TERMS

The language and terms around health systems are ever-evolving, however, for the flow of the document we have chosen to keep the language simple and consistent. We explain a few important terms here:

Human-centered: The term "human-centered" includes concepts of patient-centricity, but also includes optimizing the health system by considering how *all* humans (such as doctors, nurses, other care providers, payers etc.) interact with the system and each other.

Value-based care (VBC): Value-based care is a framework to focus on providing more health rather than providing more healthcare services. Value is defined as the ratio of outcomes that matter to patients and the total cost of providing such outcomes. VBC optimizes how we measure, deliver, and pay for care.

Patient: We prefer terms such as "people living with diabetes", instead of "diabetes patients", to indicate the reference to the person as a whole rather than focusing on a health condition. In this document, we have used the word "patient" for simplicity, but without meaning to dilute the holistic reference to the person. Additionally, we mean "patient" to cover all people who are experiencing a health condition or simply seeking health.

Patient organizations: While the term originally refers to organizations advocating for patients and their rights, we have used it to include the patients themselves, organizations that consist of patients (e.g. a support group with no advocacy function) and/or patient advocacy organizations.

Local: We have used the term "local" to represent the people living in the country or province we refer, or even the catchment area of a particular health facility. We have used the term to indicate people residing in the area including immigrants and other minority groups.

WHO CAN USE THIS PLAYBOOK?

A variety of payers and healthcare providers can initiate the design process. Here are a few examples:

A national health insurance scheme. Anticipating the tidal wave of non-communicable disease (NCD) patients and associated costs, a national health insurance scheme wants to develop a value-based hypertension and diabetes management program. Read the full case study in Appendix 1.

A donor-funded program. A program seeks to evaluate the impact and cost-effectiveness of tuberculosis (TB) services delivered by private providers. The program wants to measure and improve the value of an innovative and human-centered model to TB care. The donor pulls in the government-financed TB program and a network of private TB providers to develop a value-based model.

A private insurer. The payer is struggling with appropriateness and quality of cardiovascular procedures. The payer wants to establish a value-based purchasing mechanism across their network and pulls in a high-performing cardiac hospital network as a design partner.

An integrated payer-provider. A provincial government wants to expand a human-centered approach to diabetes care, and wants to demonstrate the value of this model to the provincial treasury/CFO. If successful, they expect the government to scale the model across the province and potentially the country.

A private provider. A civic-spirited provider who has delivered human-centered maternity care wants to demonstrate the value of their model to both investors and to their clients who pay out-of-pocket.

CONTENTS

ACRONYMS AND ABBREVIATIONS

Acronym	Explanation
CHW	Community health worker
CII	Center for Innovation and Impact (USAID)
CROMS	Clinician-reported outcome measures
DALYs	Disability-adjusted life years
DRGs	Diagnosis-related group
EMR	Electronic medical record
FFS	Fee-for-service
GDPR	General Data Protection Regulation is a Regulation
HIPPA	Health Insurance Portability and Accountability Act
HIV	Human immunodeficiency virus
HRQOL	Health-related quality of life
HTA	Health technology assessment
IDP	Inpatient department
IHI	Institute of Healthcare Improvement
IRB	Institutional Review Board
LMIC	Low- and middle-income countries
LOI	Letter of interest
MIS	Management information systems
MOA	Memorandum of agreement
MOU	Memorandum of understanding
NCD	Non-communicable disease
OHA	Office of HIV/AIDS (USAID)
OOP	Out-of-pocket
OPD	Outpatient department
PEPFAR	The United States President's Emergency Plan for AIDS Relief
PREMS	Patient-reported experience measures
PROMS	Patient-reported outcome measures
ROI	Return on investment
TB	Tuberculosis
TCOC	Total cost of care
TDABC	Time-driven activity-based costing
UHC	Universal health coverage
VBC	Value-based care

INTRODUCTION

A human-centered approach to healthcare not only achieves better outcomes for patients, but can also, ultimately, be a "better buy" for achieving universal health coverage (UHC). Value-based care (VBC) has emerged as a powerful framework for designing human-centered health systems.

Leapfrog to Value launched its flagship report in 2020, making the case that low- and middle-income countries (LMICs) have an opportunity to embrace VBC on their pathway to UHC, and offering a strategy to realize that vision. This playbook is a follow-up to that report. It provides guidance for patients, payers and providers to collaboratively design human-centered health systems.

The playbook is informed by work undertaken by Leapfrog to Value and its partners across care pathways - including TB and HIV, maternal and neonatal health, diabetes, physical rehabilitation, and palliative care - in India, South Africa, Ghana, and Kenya. This guide will continue to evolve over time, with inputs gathered from lived experience and evidence generated across various demonstration projects.

The playbook has four chapters, same as the four steps in the design process shown in figure 1. The first chapter explains how to initiate a value-based **partnership**, bringing together patients, payers, and providers, as well as experts that can support the design process. The second and central chapter breaks down **design** into three elements – how to measure, deliver, and pay for value. The third chapter describes how partners formalize their **commitments**, and align on goals and roles for implementation. The fourth offers guidance on how to transition from design to **implementation.**

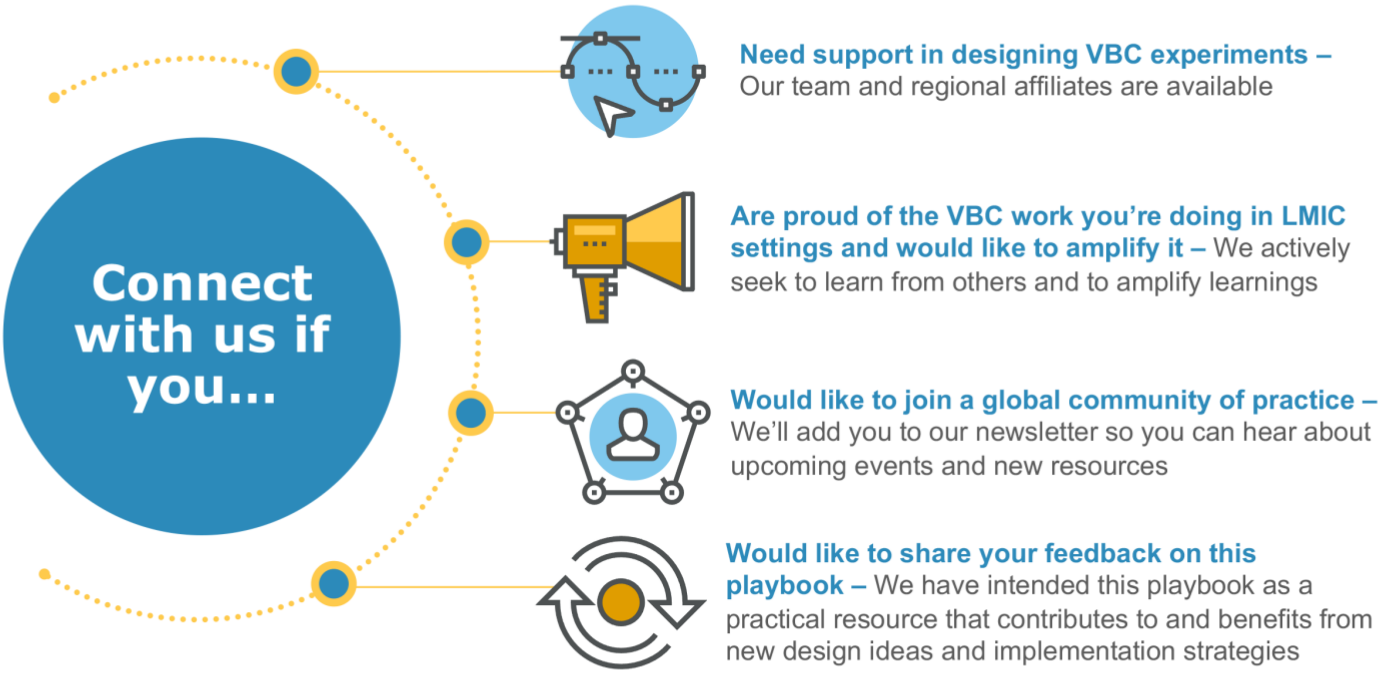
Each stage of this process represents increasing levels of trust and commitment between patients, providers and payers. To build trust across these three partners, it is often helpful to involve a neutral third-party facilitator. Leapfrog to Value and its affiliates often play this role. Please consider a few factors when using this document

- **Culture:** We can't emphasize enough the importance of adapting this playbook to local cultural contexts. The spirit of value-based care is to decentralize decision-making, empower patients to define success and shape the care pathway, and empower frontline providers to be effective stewards of healthcare resources. This means VBC models should reflect how local partners define value.
- **The health system:** VBC can be adapted to many different market contexts. We distinguish payers from providers. This is perhaps most relatable to insurance-based systems where there's a clear split. However, VBC has also been implemented successfully in systems where the payer and provider are combined, like the UK's NHS.[1] In the context of more integrated health systems, value should guide resource allocation and be embedded into accountability mechanisms.
- **Flexibility:** Though we have written this playbook as a series of sequential steps, value partners may find it useful to selectively use certain modules to meet their immediate needs.

FIGURE 1: The four steps in the design process

To complement the playbook, we are creating a bank of case studies that illustrate the design of VBC models that we hope will inspire you and demonstrate the nuances of this work. You can read them on our website, and we will keep adding new stories as the VBC work in LMICs grows.

We are eager to hear from you and to support your efforts. Please reach out to us at info@leapfrogtovalue.org if you:



Connect with us if you…

Need support in designing VBC experiments – Our team and regional affiliates are available

Are proud of the VBC work you're doing in LMIC settings and would like to amplify it – We actively seek to learn from others and to amplify learnings

Would like to join a global community of practice – We'll add you to our newsletter so you can hear about upcoming events and new resources

Would like to share your feedback on this playbook – We have intended this playbook as a practical resource that contributes to and benefits from new design ideas and implementation strategies

FIGURE 2: Connect with us

01

PARTNER

HOW DO YOU BUILD A COALITION OF ACTORS INTERESTED IN EXPERIMENTATION?

The best partnerships emanate from a shared ethos. In VBC, the ethos is a belief that human-centered care can deliver better outcomes at a better cost. Buy-in from stakeholders is the foundation for an effective design process. Every partnership is characterized by two elements:

1. A focus on a specific care pathway, and

2. Participation from ***value partners*** i.e. patients, providers, and payers.

1.1 Select a care pathway

Value-based care is organized around the patient’s experience. A care pathway includes all the stages of a patient's experience with a certain condition, from pre-diagnosis to treatment to rehabilitation and palliative care (where relevant).

If a care pathway has not already been selected, this is your first task. You can develop a shortlist of potential options based on **health impact, cost, and capturability,** using both data and expert judgment.

Health impact. Which care pathways have the biggest impact on the health and wellbeing of the population? While you may be able to determine these with expert judgment, you may also turn to public health databases at national and local levels. National disease burden in terms of disability-adjusted life years (DALYs) can be considered, and data sources can include WHO, Lancet Global Health Reports and IHME Global Burden of Disease Data, IHME Global Health Data Exchange Data.

For more localized data, you may consider government databases and academic publications.

Cost. Which care pathways account for most health spending? Robust cost data can be limited in resource-constrained settings, and expert judgment may be needed to complement gaps. However, if you are operating in an insurance-based system, you may assess cost by looking at claims. This works particularly well for discrete procedures. You may consider using clinical grouper systems, such as diagnosis related groups (DRGs), or clinical pathways based on guidelines to support disease-specific costing.[2] For chronic conditions such as hypertension and diabetes which have a complex patient journey with multiple touch points, the claims analysis requires aggregating dozens of claims codes to estimate the total cost impact. While thinking about costs, it is important to remember that a part of health spending may be carried by the patients. Therefore, understanding out-of-pocket (OOP) costs based on publications and community surveys can add insight that help choose a care pathway.

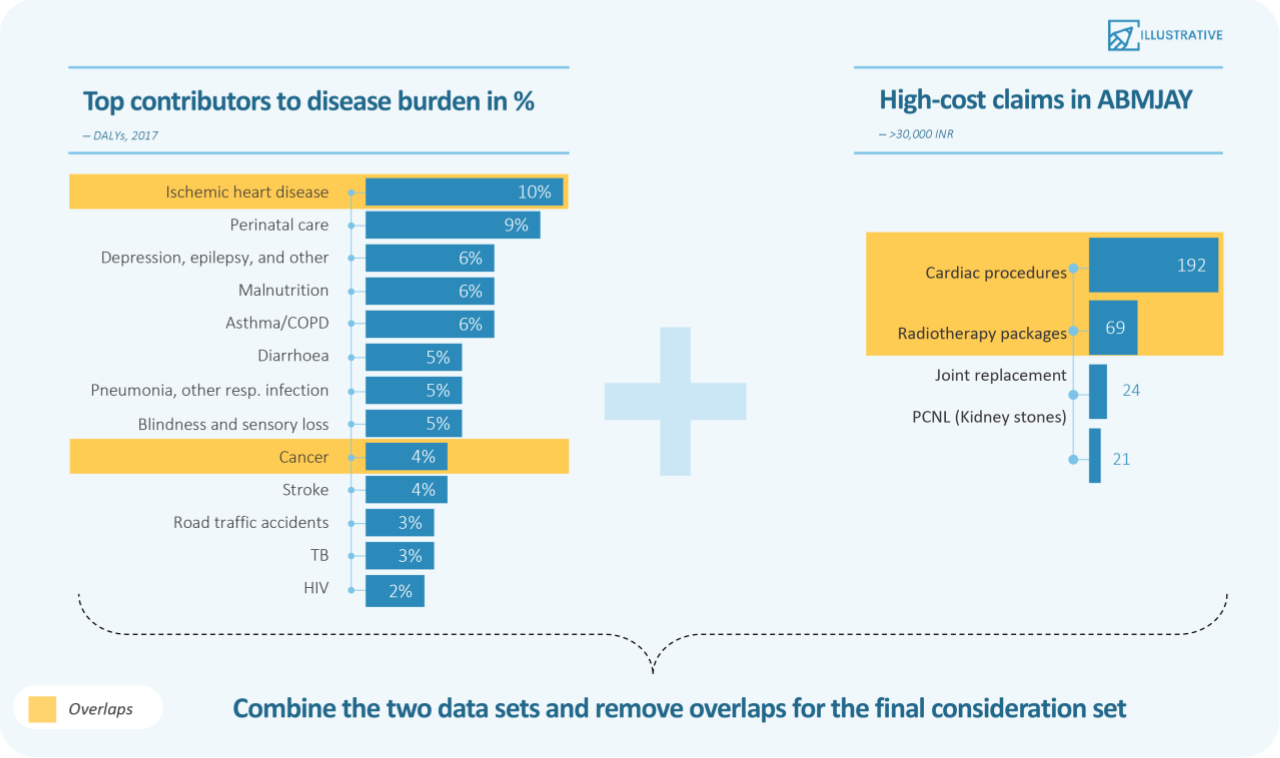


FIGURE 3: Illustration of using health impact data and cost data (from India) to select a care pathway

Capturability. Capturability means how much of the value can be captured back for the health system, by redesigning how we measure, deliver, and pay for care. Consider these questions to assess capturability:

- Where are pockets of high motivation? For example, in what areas have leaders acknowledged the need for change?
- Which care pathways provide particularly poor value? Such pathways may not cost the most in absolute terms but illustrate the potential for improving value of care because:
    - the care provided is grossly misaligned with patient preference;
    - there is clear wastage of resources; or
    - the pathway is highly fragmented, creating inefficiencies and poor experience.

There can be additional, more subjective considerations, such as care pathways that offer quick wins - you may show results faster with shorter care pathways like joint replacements, than with those with long life courses like hypertension. Also consider feasibility – for example, there may be better-supported data infrastructure for conditions like TB or HIV.

Once the care pathway has been selected, it is important to define the inclusion criteria within the selected care pathway (i.e. geographic location, demographic characteristics, stage of disease, patient segment, age group etc.); as well as the limits of the pathway i.e. when and how does the care pathway start and end? This should be done in consultation with patients, providers, and payers.

1.2 Bring together strong value partners

To ensure inclusive design, group needs broad representation and clarity of roles. The stakeholders that must be engaged in the participatory process include:

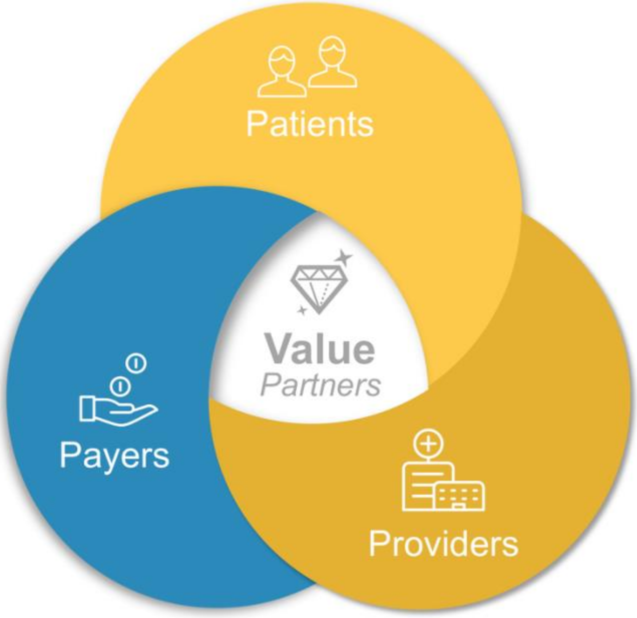


FIGURE 4: Partnership that enables a value-based approach to design

Value partners are patients, providers, and payers. It is important for them to align objectives prior to beginning the design phase, and continuously thereafter. This includes acknowledging the limitations of the current care pathway, building a hypothesis they want to test, and calibrating the level of rigor in evidence Marking the alignment can be in the form of a memorandum of understanding (MOU) or a team charter, signaling their joint commitment to the principles of value-based care and intent for design. The MOU must allow value partners to opt out of the experimentation implementation phase as well.

Value partners include:

Patients (including organizations that represent them):

Choosing groups that accurately represent the target segment/s in terms of socio-economic contexts, risk categories, and geographic scope is important to capture the patient's lived experience inside and outside the health facilities. Input from patients can be solicited in a number of ways, e.g. workshops, interviews, and surveys.

Payer/s

Ideal payers are leaders in terms of geographic coverage, provider network, and/or population served (or market share for private payers). They also have a willingness for bold innovation, and the resources to support and scale experimentation. In the case of limited resources, payers can consider seeking start-up support from donors. Consider including team members from strategy, actuarial, product design, claims management, and disease management functions.

Provider/s

Preferred providers have an appetite for innovation, a desire to improve outcomes at optimized costs, an ability to stay nimble through experimentation, and capacity to scale proven models. Consider having representation from medical personnel of various levels, clinical operations and quality personnel, and procurement staff.

An integrated payer-provider

In many contexts, the government is both payer and provider. In these instances, it is critical to include staff responsible for the provision of care, as well as staff that have insight into financing, resource allocation, and procurement.

The design process requires expertise that may exist within the value partners above, or may be drawn from external organizations. The following **capabilities** can be helpful in a successful design process.

- **Measurement:** Expertise for defining outcomes that matter (including clinician-reported outcome measures (CROMS), patient-reported outcome measures (PROMS), and patient-reported experience measures (PREMS); expertise in evaluating the quality of measurement tools and their performance; costing e.g. time-driven activity-based costing (TDABC), total costing, or other methodologies.
- **Delivery:** Expertise in service delivery design, process improvement, implementation, management. Capabilities in anthropology, human-centered design, and behavioral science are helpful but optional.
- **Payment:** Expertise in value-based contracting or strategic purchasing; data and analytics; finance and administration; and actuarial science.
- **Cross-cutting expertise:** Expertise in VBC strategy and tactics, and information technology (IT) for metrics data capture and dashboards. Capabilities in research methods for experimental design, and health economics are helpful but optional.

02

DESIGN

HOW DO THE VALUE PARTNERS DESIGN THE VALUE-BASED CARE EXPERIMENT?

VBC is a strategy for human-centered care that aligns all stakeholders around a common goal: optimizing the outcomes that matter, for the amount of resources spent. VBC encompasses best practice for how to measure, deliver, and pay for value. While we offer them in a linear format, the process is iterative, and the practice of building, testing, and refining the design is encouraged.

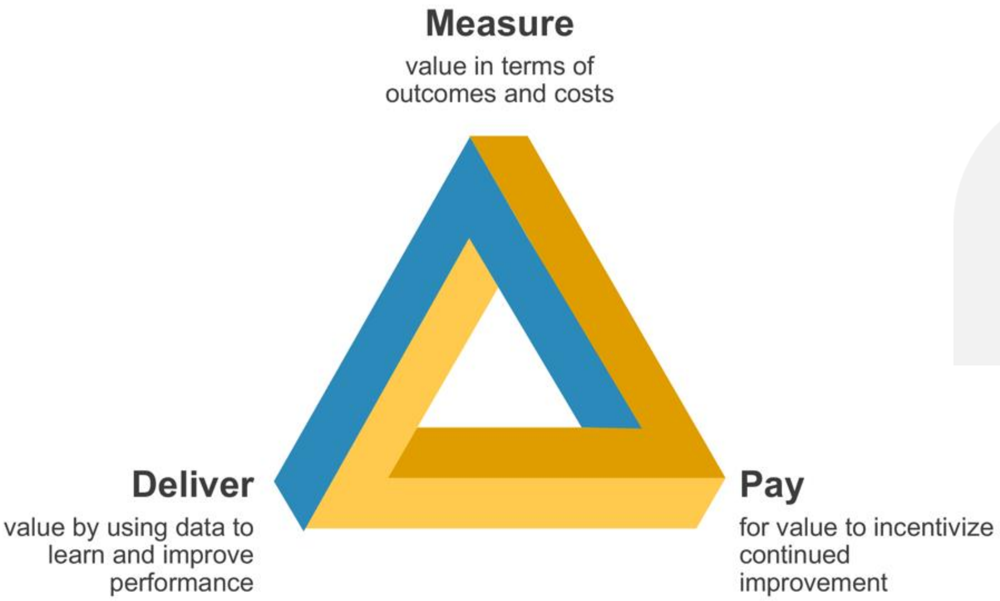


FIGURE 5: Leapfrog to Value's framework for implementing VBC principles in LMICs

2.1 Measure

What a health system chooses to measure is its 'North Star'. It guides how the system learns, improves, and innovates. It is the basis for how success is defined and how resources flow. If the goal is to maximize value, measuring value is imperative.

The numerator in the value equation is **human-centered outcomes**. The denominator is the total **cost** required to achieve those outcomes, aggregated across care settings and over the full care cycle.

To develop the metrics, we recommend four broad steps individually for outcomes and cost as (1) Define what matters (2) Prioritize potential metrics (3) Develop an integrated tool (4) Field test.

$$\text{Value} = \frac{\text{HUMAN-CENTRED OUTCOMES}}{\text{TOTAL COSTS}}$$

FIGURE 6: The value equation

Note of ethical considerations

In some LMICs, any primary interactions with the patients (both for design process and the implementation of patient-centered measurement later) require approval from an ethics committee or the Institutional Review Board (IRB) which can take a few weeks and should be budgeted for. For instance, for our "Patient-centered measurement in TB" project in India, we received IRB approval for patient data collection in about four weeks.

FIGURE 7: Steps to designing and testing value metrics

a. Human-centered outcomes

Human-centered outcomes encompass clinical outcomes (reported by providers: mortality, morbidity, biomarkers etc.); wellbeing (symptoms, functional status, and health-related quality of life); and care experience (a patient's subjective perception of care). These are central objectives of a human-centered health system.

Provider and patient behaviors enable these outcomes. Providers deliver care with compassion and clinical excellence, i.e. high quality and evidence-based practice. Patients seek care in a timely manner and adhere to a treatment plan that's jointly developed with their providers. While these provider and patient behaviors can be measured, here we focus on the measurement of the human-centered outcomes. **Figure 7** demonstrates the conceptual relationship between these aspects of a human-centered health system.

FIGURE 8. Relationship between human-centered outcomes and patient behavior

We recommend three steps to develop a practical and insightful set of human-centered outcome metrics. First, understand 'what matters' to patients across clinical outcomes, wellbeing, and care experience. Second, develop options for measuring these. Third, consolidate these options and integrate them into tools like patient surveys.

FIGURE 9. Illustrative process of arriving at a prioritized set of metrics

i. Define what matters

In defining what matters to patients, the primary source of insight are local people who have experienced a particular health condition. You may also consider others close to the patient. For palliative care, you may consider both the patient and their family (medical proxies). For maternity care, you may consider the parents' and child's perspectives. It is important to ask: how can the sample consulted represent the concerned people well? Do they represent vulnerable patients with whom the health system finds difficult to engage?

The inquiry can start broadly by asking, "What outcomes matter most to you? It can specifically probe clinical outcomes, wellbeing, and care experience. These insights may be collected in-person (using interviews and focus groups) or digitally i.e. surveys, chat rooms, online support groups, and social media).

Other sources can also offer vital insight, including:

- literature that explores what shapes care-seeking behavior and adherence; that apply patient-reported outcomes and experience measures; and that study social, behavioral, and environmental determinants of health;
- frontline providers (doctors, nurses, community-health workers, etc.) who have a reputation for human-centered care and can comment on their perceptions of what matters most to patients and the organizations that represent them locally;
- medical anthropologists and epidemiologists who understand how a disease is shaped by factors outside the clinical context.

When considering both primary and secondary sources, it is important to understand how "what matters" varies for different populations. People who represent minoritized or stigmatized identities are critical to consult, because they face particularly high barriers to engaging the health system.

The output of this process will be a list of (ideally prioritized) outcomes. **Figure 10** shows an example output for HIV, developed with USAID and PEPFAR.

FIGURE 10: Illustration of outcomes that matter in HIV

ii. Develop potential metrics

The next step is to identify (or develop) metrics that can be used to routinely and reliably assess a system's performance. One useful starting point is the International Consortium for Health Outcome Measurement (ICHOM), which has standard sets[3] for human-centered outcomes. Their 44 sets cover health conditions constituting 57% of the global burden of disease. Resources are available at ichom.org. Value partners may use the ICHOM set and modify for local context and resource constraints. They can also evaluate other individual metrics available as follows:

- **Clinical outcomes.** These are often already well-defined and value partners need to select a subset of clinical metrics that are feasible to collect and align best with what matters to patients. These are not process metrics (e.g. antenatal attendance or skilled-birth attendance), but the end outcomes (e.g. preterm birth or birth complications).

- **Wellbeing.** These are symptoms, functional status, and health-related quality of life. They encompass physical, mental, emotional, and social health. A questionnaire (tool) is used to assess these dimensions of functioning directly from patients, which is why these are often called patient-reported outcome measures (PROMs). Tools that have been validated for specific contexts can be useful. Such tools can either be health condition specific (e.g. Functional Assessment of Cancer Therapy – General i.e. FACT G) or generic (e.g. EQ5D for health-related quality of life). These existing tools may be adapted further for your context.

- **Care experience.** Experience measures get at the subjective perception about convenience, responsiveness, and respectfulness of the care received. Similar to wellbeing, these measures are assessed directly from patients and are known as patient-reported experience measures (PREMs). There are existing validated measurement tools (e.g. PSQ 18). Some ICHOM sets include PREMs for specific care pathways. You may also choose a simple generic experience measure such as the "net promoter score" (i.e. How likely are you to recommend this service?).

When assessing whether to use or adapt existing measures, you may ask:

- Which existing tools best cover the range of relevant outcome domains? For example, through a single comprehensive tool versus bringing together questions from different tools.

- How effective and reliable is the tool for assessing quality for a specific health condition? Has the tool been tested and validated for the purpose of measuring the outcome?

- How feasible is implementation? Consider: Socio-cultural appropriateness (i.e. beliefs and norms of a target population), length of questionnaire, availability of validated translations, options for lower literacy level (e.g. EQ-5D is available in adult and youth/lower literacy level versions), and cost of licensing.

iii. Integrate the metrics into a tool

From the potential list of measures, the next step is to consolidate various metrics to define a single set that balances insightfulness (what questions reveal about outcomes), actionability (the extent to which the system can influence the outcome), and simplicity (how streamlined it is for routinely collection and analysis). With these qualities in mind, you may adapt existing metrics to suit your operating and cultural context. This can be done as a composite index metric - a weighted average of multiple domains similar to health-related quality of life (HR-QOL) score which represent all subdomains; or as a collection of the top three to five indicators that comprise key performance indicators (similar to the three 95s used in HIV i.e. 95% know their HIV status, 95% receive treatment and 95% virally suppressed) or a performance scorecard (similar to clinical quality scorecard used by hospitals).

While it is ideal to use only validated tools to avoid unreliable results, sometimes such tools are not available or are too long for routine measurement and tracking. In such cases, consider creating a new tool using an iterative process that takes on-going inputs from patient representatives and other experts from the start of the design phase through implementation, for example:

- Create a draft questionnaire - borrow from existing questionnaires to gather insights against the outcomes that matter.
- Solicit feedback, evolving language to be relevant to cultural and social context, eliciting health-specific information, and being sensitive to patients' needs.
- Improve the draft questionnaire iteratively.
- Develop indicator reference sheets (sample HIV indicators developed by Leapfrog to Value[4]) that specify how to collect, analyze, disaggregate, and report data.
- Solicit a round of feedback via focus groups and/or asynchronous feedback.
- Finalize questionnaires, metrics and corresponding indicator reference sheets in consultation with technical experts, with sign-off from value partners.

At this stage it is also useful to develop a preliminary perspective on metric collection. At what points in the care pathway are metrics collected and questionnaires administered? How would data collection be integrated into workflow, i.e. what is the method of collection - paper-based or electronic? Who administers (e.g. clinical personnel versus administrative staff versus call centers) how the data is compiled and interpreted to inform both improvement of metrics and overall program improvement.

CEC_HIV	**Client experience of care**
Description	Percentage of surveyed clients who would recommend an HIV health service as a proxy measure of their own care experience
Rationale	Clients’ experience of care impacts their willingness to both seek and stay in care. It effectively influences clinical outcomes. A program with a clear understanding of the gaps and opportunities in services can best design solutions to address them.
Type	Outcome
Numerator	Number of clients who scored 3 or 4 out of 4
Denominator	Total number of clients surveyed
Reporting level	Project
Reporting frequency	Quarterly
Definition	This indicator identifies the share of clients who have had a good experience as a percentage of the total number of clients surveyed about their HIV care experience. Clients should be individually surveyed using the following question: **Based on your experience so far, would you recommend this service to a friend or family member?** 1 (not at all) 2 (somewhat) 3 (quite a lot) 4 (definitely) **What most impacted your score above?** • Cleanliness • Timeliness • Access to useful information • Privacy and confidentiality • Staff • Services available at the clinic today • Availability of accessing services outside the health facility Other (Please specify)
Data collection	Please refer to the section on data collection
Data analysis and use	Projects should analyze the data for the proportion of clients scoring 1, 2, 3, or 4. Those scoring 3 or 4 should be used as the numerator of this indicator, signifying a recommendation of services.
Reviewing data quality	The total count of the denominator should be equal to the sum of all age/sex disaggregation.
Reporting process	Project level: aggregate data across facilities and report quarterly.
Disaggregation	**Age/Sex:** >19 F/M, Unknown age F/M

FIGURE 11: An illustrative Indicator Reference Sheet. The actual question is included under the header definition i.e. in this case, “How has the client experienced care?”

Note of data privacy:

In collecting and handling the human-centered metrics data, it is important to ensure data privacy in line with ethical considerations, as well as local and global regulations, especially for patient-identifiable data. Reusability of the data is also an important aspect in ensuring that the broader health system, beyond the pilot audience, benefits from the insights drawn. Anonymizing or pseudonymizing and aggregating the data can enhance the privacy and confidentiality. If there is any sharing of data across partners, the value partners need to consider even more stringent measures around confidentiality, clear contracts, and consent from patients for such sharing. Confidentiality becomes especially important for sensitive health conditions such as HIV. However since this topic requires specific expertise and is beyond scope of this document, please refer to FAIR principles for data safety and privacy.

b. Costs

While most health systems account for the costs of healthcare inputs, few health systems have visibility into the costs of achieving outcomes. Understanding the cost can help make the case to invest more in high-quality and human-centered care that not only improves outcomes but also reduces costly complications (hospitalizations, second-line therapies, lost productivity, etc).

Routine measurement of cost drivers across the patient pathway

In insurance-based systems, an important insight into costs comes from medical claims. However, this offers an incomplete picture, masking significant opportunities for cost improvement. For example, many insurance products cover only inpatient care; in this context there will be no claim for care delivered before or after a hospital stay.

Where claims data provide insufficient insight into cost, we recommend developing additional cost metrics by following three steps. First, define which costs matter and prioritize the drivers based on three criteria: magnitude, room for optimization, and ability to influence. Second, develop potential metrics, drawing on existing ones where possible. Finally, integrate into a tool for routine measurement. We elaborate on each step here.

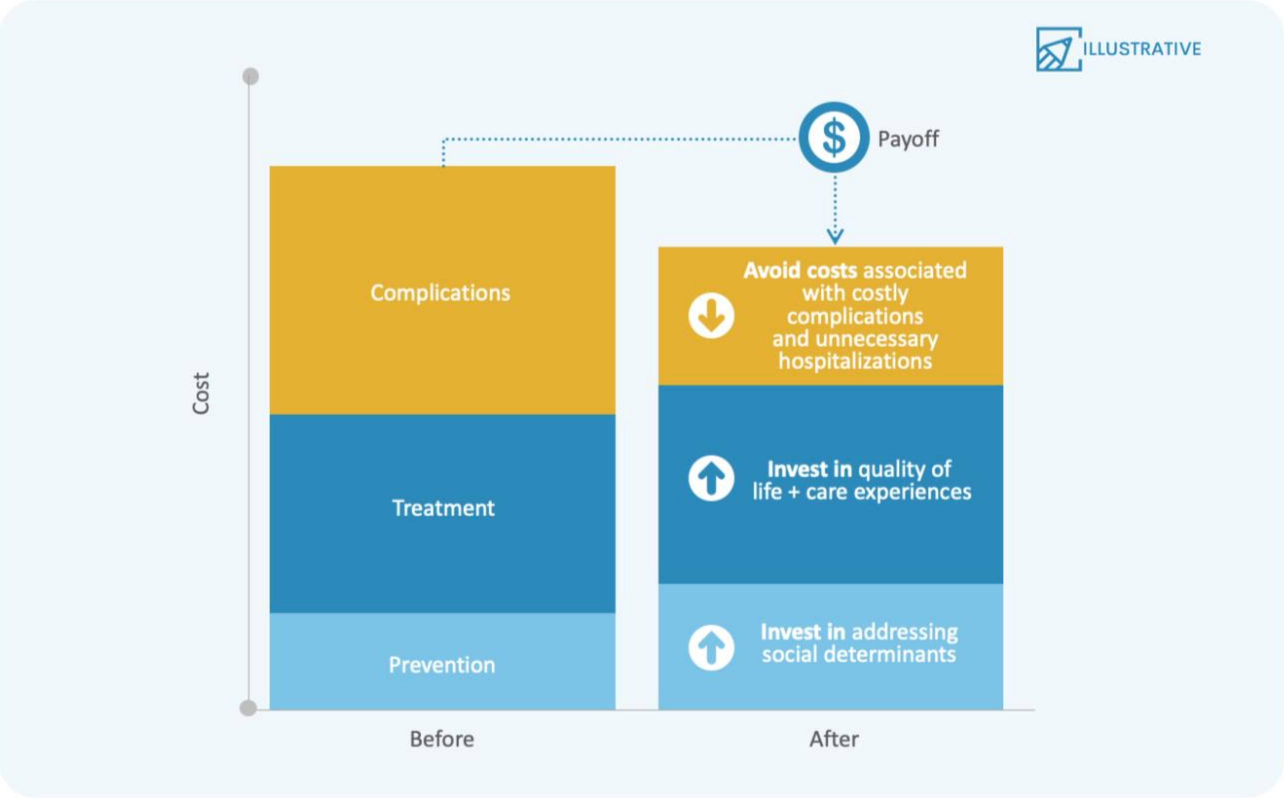
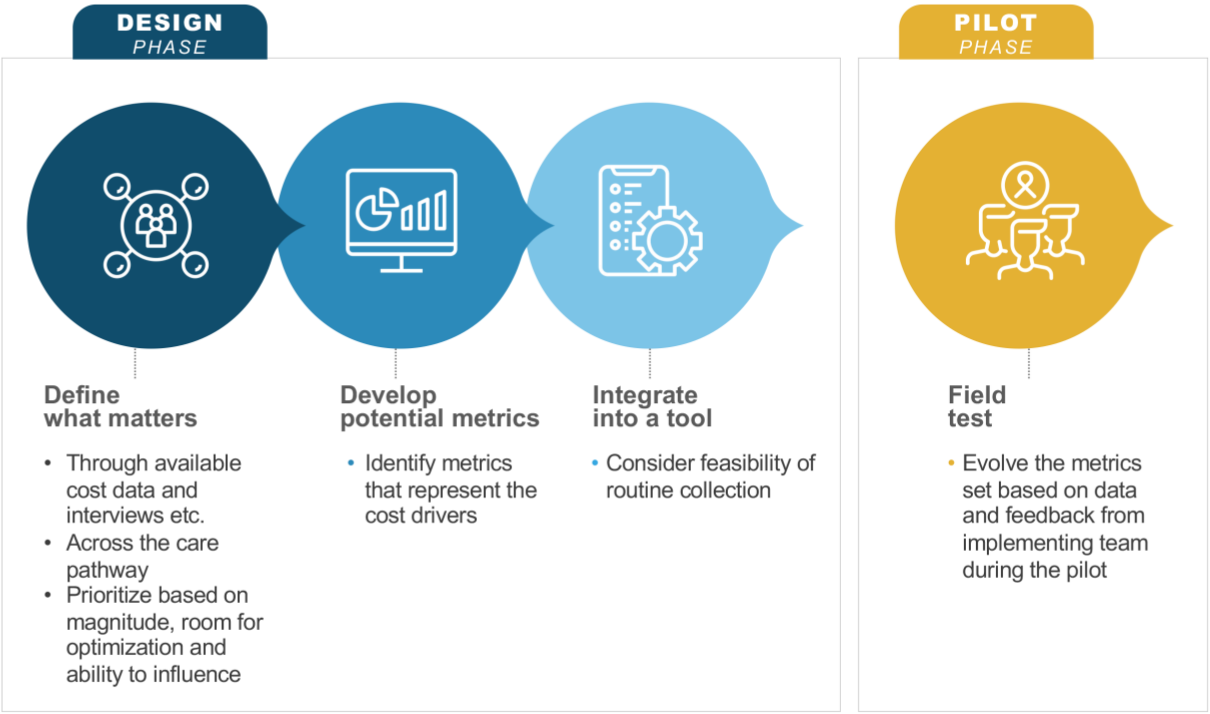


FIGURE 12: Investing in a human-centered approach can have a payoff



Define what matters

- Through available cost data and interviews etc.
- Across the care pathway
- Prioritize based on magnitude, room for optimization and ability to influence

Develop potential metrics

- Identify metrics that represent the cost drivers

Integrate into a tool

- Consider feasibility of routine collection

Field test

- Evolve the metrics set based on data and feedback from implementing team during the pilot

FIGURE 13: Process for developing cost metric

i. Define what matters

Understand major costs within categories: personnel time (doctor, nurses, care coordinator, etc); commodities (drugs, devices, consumables); facility and equipment usage, e.g. inpatient department (IDP), outpatient department (OPD) operation theater; and out of pocket costs (e.g. travel).

Then prioritize costs, considering three factors:

- **Magnitude:** How big is the cost? Consider two sources (1) interviews with care delivery personnel and (2) existing cost data – providers may use their own cost accounting reports; payers may use claims data or budgets.

- **Room for optimization: Is** there an opportunity to optimize the cost? (a) To what extent is there waste e.g. unused staff time or equipment? (b) To what extent is there inappropriate utilization, e.g. unnecessary tests/procedures? (c) What is the relationship between cost and quality? Does additional spending improve outcomes through quality or prevention, or is the cost a result of an avoidable complication?

- **Ability to influence:** To what extent do value partners have the ability to optimize the cost? Some barriers may be insurmountable in the near term, e.g. task-shifting if there are regulatory barriers around scope of practice. You may not want to prioritize metrics that are difficult to influence.

The goal is to shortlist the cost categories that have large magnitude, are ripe for optimization, and can be influenced by the value partners. While we do this analysis at a cost category level, it is worth remembering that there may be opportunities for cost improvement across the categories

ii. Develop potential metrics

The next step is to define metrics for priority cost categories.

TABLE 1: Cost categories, drivers of cost, and metrics

Cost category	Example driver of the cost	Illustrative metric
Personnel cost	Who delivers a particular service?	• Percent of low-risks births handled by a midwife vs. obgyn
	How effectively do we use their time?	• Percent time doctor spends on administrative tasks • Time spent in traveling for home visits
	How efficient/ effective is the service delivery?	• No. of HCW home visits/patient during 6 months of uncomplicated TB treatment
Commodities	Cost of drugs	• Percent of people receiving second-line therapy
	Effective use of consumables	• No of dialysis cycles before replacing filters
Facility/ equipment usage	Unutilized time	• % time the Cath lab is not in use
Patient OOP costs	Travel and accommodation cost	• No of days patient & caregiver had to stay outside their base city/town/village
Cross-cutting	Avoidable expensive procedures	• Proportion of C-section out of all births
	Steps of care process	• Number of patient visits required to fill prescription of 6 months of TB drugs
	Avoidable complications	• 1 year readmission rate for patients of myocardial infarction

iii. Integrate into a tool

In developing a tool for collecting cost metrics, feasibility of routine data collection is an important consideration. Therefore, consider existing cost data availability, ease of data collection, and resources needed to collect. Data may be collected from facilities (e.g. existing record-keeping departments, cost accounting systems, management information systems (MIS) or electronic medical record (EMR) systems) and patients.

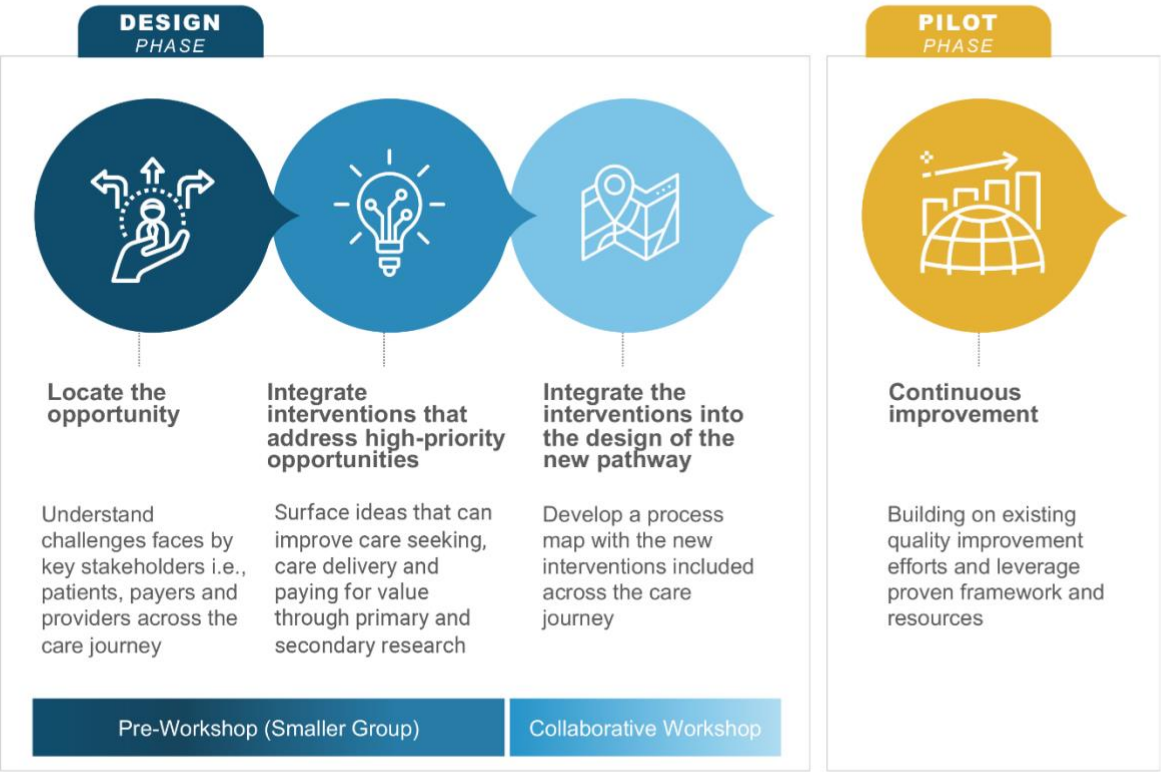


FIGURE 14: Designing high-value delivery pathway

2.2 Deliver

Value-based care is built around care pathways. We recommend three steps in the design phase, followed by a process of continuous improvement during implementation.

First, locate the opportunity – what are critical gaps in value creation? Second, identify the set of interventions that can help capture the opportunity. Third, integrate these interventions into a seamless care pathway while also integrating the relevant clinical guidelines.

Steps one and two can be done by a small working team in advance of step three which works best as an interactive workshop.

i. Locate the opportunity

This step is about finding the most significant opportunities to improve value. It should involve design partners with deep insight into the challenges each stakeholder faces at different stages in the care journey (prevention, management, and recovery).

The questions below can serve as a starting point for dialogue among these partners:

What are the obstacles for patients to:

- seek care in a timely way?
- demand high-value care?
- practice healthy behaviors?
- stay engaged in care?

What are the obstacles for providers to:

- support patients across the full care journey?
- adopt a respectful, dignified approach?
- deliver evidence-based care interventions?
- address social, behavioral, and environmental determinants?
- use the highest value drugs, diagnostics, and technology?

What are the obstacles for payers to:

- finance/pay for the highest value interventions?
- offer incentives to providers to promote value generation?
- manage costs outside of their immediate control (i.e. primary care, if they only cover hospital care)?

The output of this exercise is a synthesized perspective on the opportunity to improve value. **Figure 15** illustrates one example.

		High Risk Period		
	Antenatal	**Labor and birth**	**Early postpartum**	**Late postpartum**
Care-related drivers	• Late presentation for ANC • Poor initial assessment and diagnosis • Poor identification of high-risk patients • Poor utilization driver by discrimination and poor experience of care	• Poorly coordinated pre and post birth care	• Intrapartum birth • Inadequate monitoring of baby's condition • Limited neonatal management plans	• Limited psychosocial and informational support for mothers
	• Poor access to timely transport • Disrespectful or abusive care • Poor referral systems • HRH or equipment shortages • Disparities in distribution of resources • Lack of focus on quality			
Clinical	• High levels of maternal psychosocial distress • Non-pregnancy related infections • Hypertensive disorders • Maternal malnutrition	• Obstetric hemorrhage	• Intrapartum birth asphyxia and prematurity	• Preterm birth • Maternal malnutrition • Low birthweight

FIGURE15: An illustration of value drivers for maternity and neonatal health in the South African public sector

TABLE 2: Types of high-value interventions

ILLUSTRATIVE

Enable self-care
- Patient education
- Consumer tech that supports health behaviors, adherence to medication
- Care navigation

Optimize site of care
- Home-based care
- Community-based care (schools, workplaces, places of worship)
- Telehealth options

Improve clinical quality
- Provider checklists
- Clinical protocols
- Tech-enabled decision-support tools

Create high-performing teams
- Match task with role (task-shifting up / down / laterally)
- Management practices
- Collaboration software
- Scheduling and referral management

Care for high-risk
- Early screening for risk factors
- Stratify care pathways according to risk
- Social + behavioral interventions

Manage inputs
- Formulary management
- Strategic procurement of commodities

Improve the provider network
- Enable patient choice through transparent quality scores
- Channel patients to centers of excellence

ii. Integrate interventions that address high-priority opportunities

Now that you've clarified opportunities to improve the value of care, identify interventions that will help capture that value.

Be open to a variety of possibilities. Consider both existing interventions that have demonstrated significant impact on outcomes and/or costs, and innovative technologies or service models that show promise. High-impact interventions can be narrow (a pre-op checklist for a surgical procedure) or broad and structural (establishing a new one-stop shop for diabetes care). The list of intervention that follows is meant to provoke thoughts and is not intended to be exhaustive. After reviewing a wide spectrum of potential interventions, it's helpful to narrow in on those that balance ambition for impact and feasibility of implementation.

iii. Integrate interventions into the care pathway

Bring the proposed outputs from steps 2 and 3 into a workshop setting with all value partners. Map the chosen interventions across the patient pathway. An illustration of the completed map is shown in **Figure 16.**

Once implemented, the care pathway can be continuously improved, optimizing it based on emerging insights.

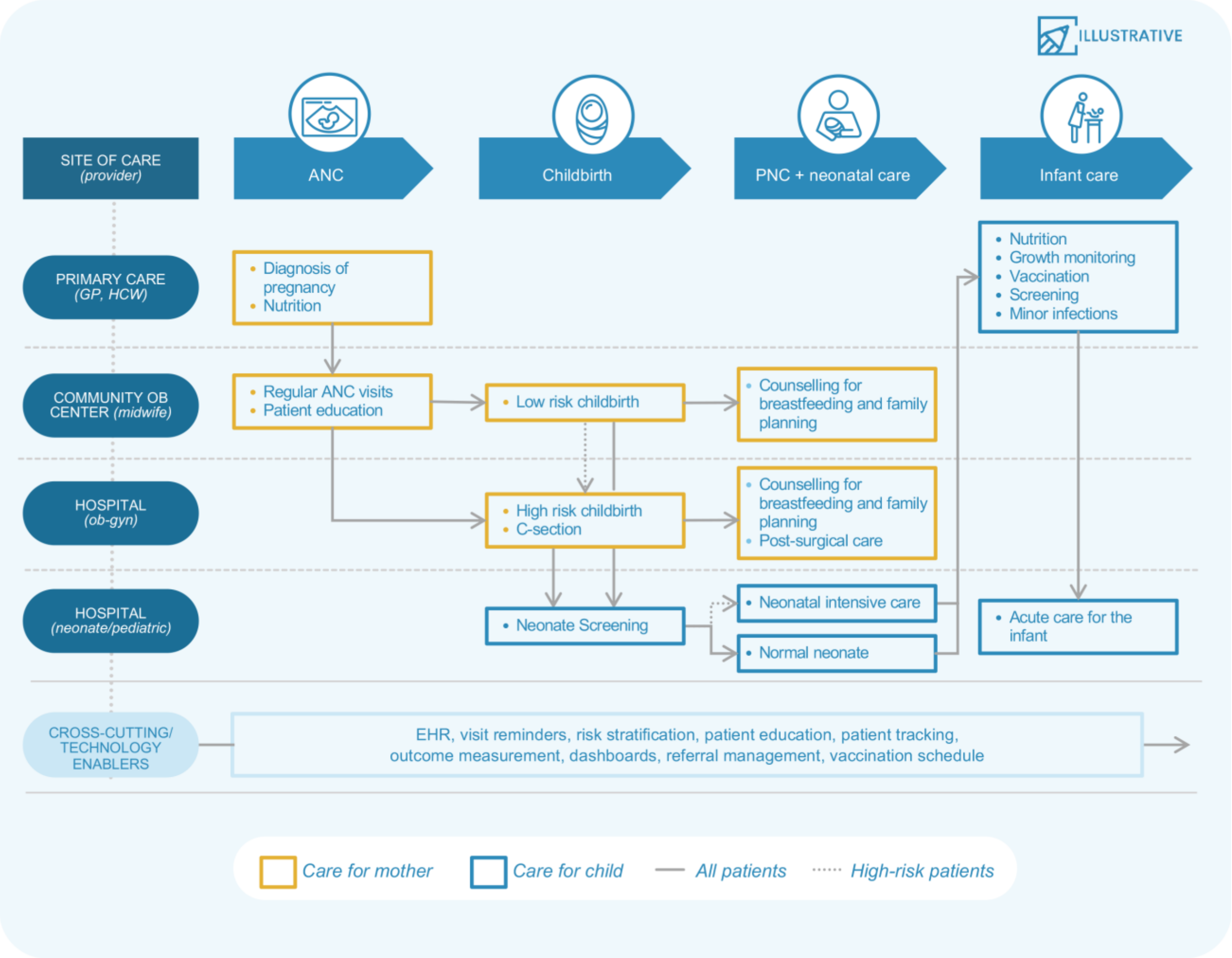


FIGURE 16: Illustration of a high-value maternal and neonatal care pathway

2.3 Pay

The flow of resources in a system can act as the invisible hand that shapes how and where care is delivered, how the health sector recruits talent, which facilities and infrastructure attract investment, and which innovations are adopted.

Given these far-reaching implications, it is important that payment design reflects a health system's priorities. This means aligning budgets and payment mechanisms with the highest-value interventions.

Value-based payment models reward providers for better outcomes and cost optimization. These models can include shared savings, bundled payment, and capitation payment models. More detail about what the models look like and where to best use them is in **Table 3** below. Complementary incentives for quality and efficiency can also be coupled with these three models.

TABLE 3: Types of incentive models

Shared savings	Bundled payment	Capitation/global fee per patient
Prospective fee-for-service (FFS) with sharing of retrospective total cost of care (TCOC) savings between payer and provider organization	Fixed single payment for a defined episode of care	A fixed payment per person for a year, and usually adjusted for health-related risk factors. The payment can be determined per person for the population covered or for enrolled patient level.
Where it works best		
For starting the transition toward a value-based payment	Acute care and procedure-based care	Chronic conditions, primary care etc.

In selecting a payment model, keep in mind that providers have different ability to manage actuarial risk (i.e. the actual cost of claims and benefits can deviate from the expected cost as a result of variation in patient mix, errors, and complications). On the spectrum of risk-sharing, the provider takes on the lowest actuarial risk with shared savings and takes the highest with capitation. Value partners can follow the four steps outlined below, to arrive at the right payment model.

Step 1 Package products and services

The first step is to define the package of healthcare products and services i.e. what is included and excluded, and understanding related risks.

- **Inclusion.** The package should include interventions mapped out in the Deliver section, keeping in mind what the provider can manage and take financial responsibility for.
- **Limits:** Think about what "triggers" the start and completion of a bundle (e.g. from an initial diagnosis through a three-month post-operative recovery period). Some care pathways do not have an end point. For diabetes, for example, you may have one six-month package for screening and intensive lifestyle intervention. This can be followed by an annual maintenance package that includes regular follow-ups, treatment of comorbidities and specialty care.
- **Services included:** These can include clinic visits, consultations, day procedures, hospital stay, and post-operative care. Some packages may include interventions that address social and behavioral determinants of health such as mental health counseling or food stipends.
- **Products:** These will include medicines and diagnostics tests. Some packages may extend to provide innovative products such as self-monitoring devices

- **Exclusions.** It is important to identify high-cost but low probability outlier scenarios where the risk is better managed by a payer. For example, in a maternal-neonatal package you may include some neonatal care, but not intensive care for sustained ventilatory support.

- **Risk categories.** You may define distinct categories for patients of different risk levels. For example, in maternal care pathways, the consumption of health services and related costs will vary by the mothers' risk factors, e.g. if the mother has hypertension or diabetes. Defining risk categories allows providers to channel the patient to the right intensity of care and optimize outcomes and costs.

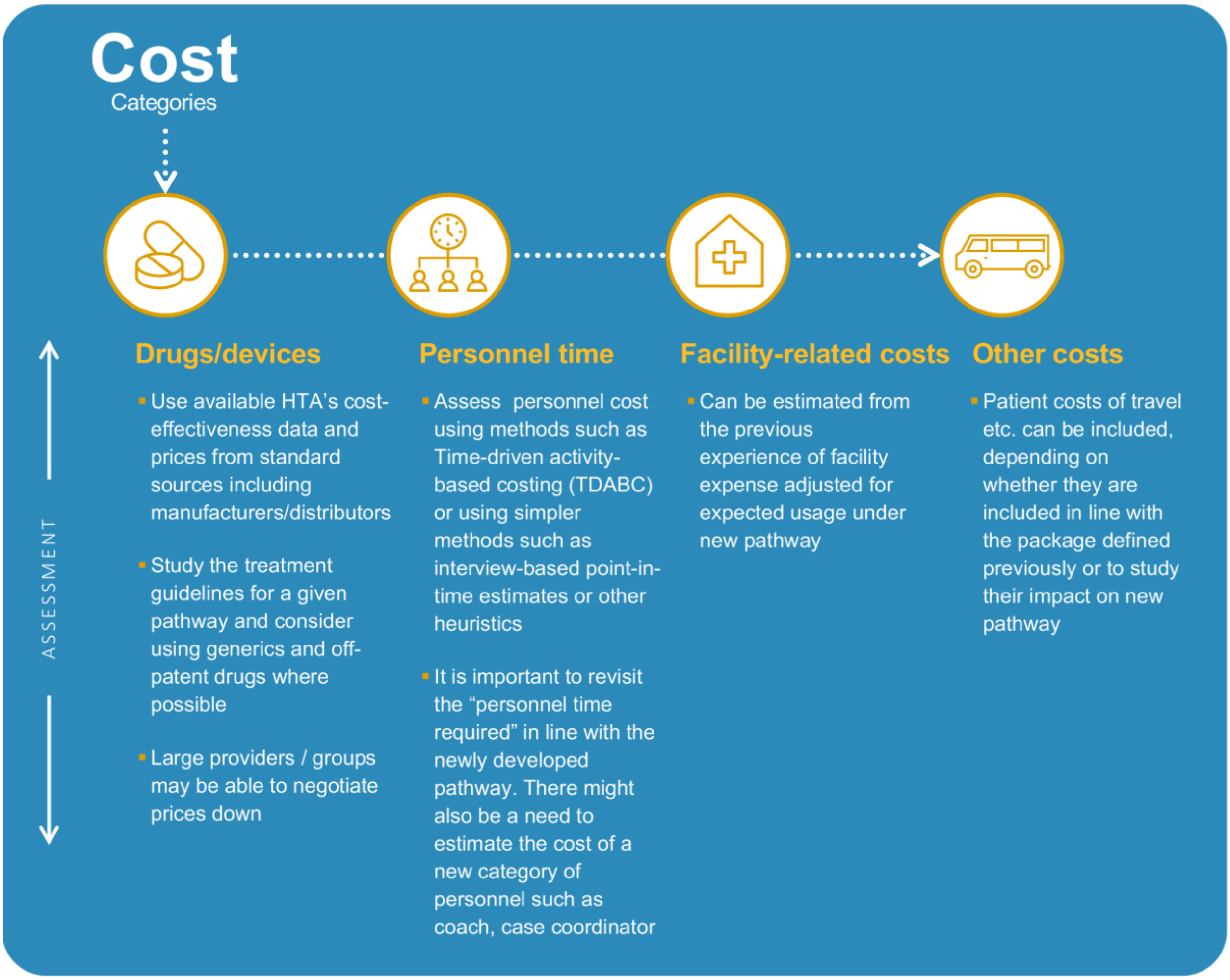
Step 2 Price the package

The process for arriving at pricing depends on how much cost-data-sharing is possible between the payer and provider. A general overview of a two-step process that might work for most situations follows below.

Firstly, the provider and the payer independently develop a perspective on the price of the defined package. While the provider has direct access to their own costs and is able to do bottom-up costing, the payer would be triangulating based on past claims data. The defined package will be different and more cost-optimized as compared to the existing patient pathways. As such, costing the new package requires challenging existing costs and integrating the optimizations developed at the "Deliver" stage.

The provider does this by estimating the bottom-up cost of providing the high-quality services across various cost categories **(Table 4).** The provider may need support from an external expert organization to be able to do this costing exercise rapidly.

TABLE 4: Methods of estimating the costs for various cost categories



Drugs/devices	Personnel time	Facility-related costs	Other costs
▪ Use available HTA's cost-effectiveness data and prices from standard sources including manufacturers/distributors ▪ Study the treatment guidelines for a given pathway and consider using generics and off-patent drugs where possible ▪ Large providers / groups may be able to negotiate prices down	▪ Assess personnel cost using methods such as Time-driven activity-based costing (TDABC) or using simpler methods such as interview-based point-in-time estimates or other heuristics ▪ It is important to revisit the "personnel time required" in line with the newly developed pathway. There might also be a need to estimate the cost of a new category of personnel such as coach, case coordinator	▪ Can be estimated from the previous experience of facility expense adjusted for expected usage under new pathway	▪ Patient costs of travel etc. can be included, depending on whether they are included in line with the package defined previously or to study their impact on new pathway

The payer can study past claims data for the related ICD codes/DRGs, and adjust for the newly agreed pathway interventions. Some events in the pathway will have probabilities associated with them. For example, if the package includes care for complications, that would add to the cost of the package. For example, a complication that has a 10% likelihood and costs $5,000 would add $500 to the package cost.

Secondly, the provider and the payer negotiate a fair and sustainable price of the package by sharing as much of their calculation as possible with each other. In some markets, the payer may be able to offer guaranteed payment, assuming minimum service delivery volume, to negotiate a lower price.

In the case of an integrated payer-provider, or when both payer and provider are government departments, the process may take fewer steps.

The payer and provider may also consider bringing in a third-party impartial organization to arrive at a price. Leapfrog to Value and its affiliates often play this role.

Step 3 Embed incentives that reinforce value

The package can be further strengthened by linking part of payment to outcomes. Such incentives should also be designed to encourage participation from more efficient providers while reducing chances of gaming the process or fraud. This design process focuses on incentives for provider organizations who may choose to cascade these incentives down to staff.

Provider incentives: There can be two types – financial, through pricing; and patient volume, through network management approaches.

In designing incentives through pricing, the payer and provider should keep in mind these points:

- Link payment to very few indicators. While the provider and payer may track many parameters, we recommend linking financial incentives only to measures that are highly credible and most important to human-centered outcomes.

- Choose the appropriate upside and downside incentives. Providers are often reluctant to start with an incentive scheme that includes penalties. Hence, it is important to start with an upside incentive only and introduce downside incentives once the track record of outcomes is established. If the size of a penalty is too high, providers may refuse high-risk patients. On the other hand, if the bonus is too small, it may not motivate bold action in providers.

- Reward serving the high-risk and vulnerable. Provide additional incentives for serving high-risk patients. This ensures access to groups who are otherwise left behind by the health system.

When it comes to incentives through patient volume, the payer should be able to work with a large number of providers for experimentation around value-based incentives. They can also use various network management approaches as incentives.

Staff incentives: The provider can decide how to further cascade the incentive to the staff. For the providers to be successful in a value-based payment environment, it is important that they have the talent and capacity that is geared towards delivering better outcomes while managing costs. After the design process, the provider organization can design its own staff incentives. There can be financial incentives (sharing part of the incentive received from payers with the team members), and non-financial incentives (recognition, ranking, culture, and communities of practice).

03

COMMIT

HOW DO THE VALUE PARTNERS DOCUMENT THEIR ALIGNMENT AND COMMITMENT TO EXPERIMENTATION?

This section explains how value partners commit to implementing their design.

3.1 Define success.

Value-based care models are first introduced as pilots. Setting a clear bar of success clarifies when pilots are ready to be scaled.

Performance threshold: Value partners align on a few metrics which are used to determine success. Ideally these include both outcomes that matter to patients and costs; they may also include process metrics such as enrollments. Value partners should align on a target at which experimentation will be considered for scale-up. In defining the threshold, it is important to remember that some metrics may not reach the level that is desired at scale, e.g. the cost per patient in a small pilot may be persistently high because of startup costs and economies of scale.

Rigor of evidence: Value partners should agree on the rigor of evidence required to inform a decision for scale-up. This may vary by stakeholder.

- Payers may need an actuarial calculation.
- Providers may need to know how the model affects volume, prices and profitability.
- Patients would want to know risks associated with new interventions.
- Funders/other scale partners would require rigorous evidence on return on investment (ROI) of this approach, and repeatability.

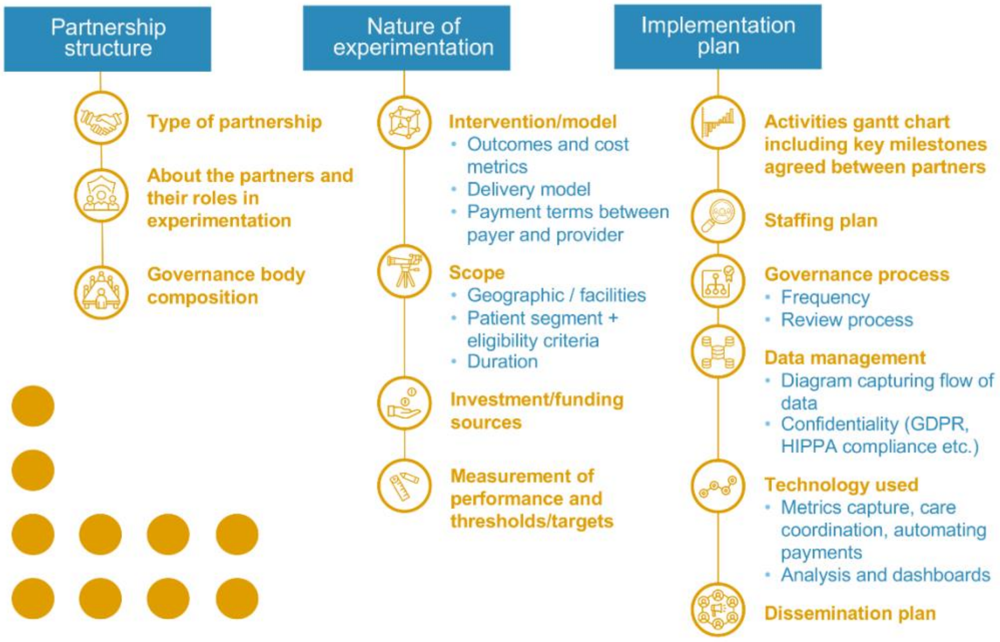
3.2 Document commitments

To ensure a smooth execution of the experiment and beyond, to facilitate transparency, and to have clarity of the roles, value partners should formalize their commitment in writing.

The agreement should include partnership structure, roles, nature of experimentation, and an implementation plan. The agreement may take the form of a letter of interest (LOI) that acknowledges intent to explore the possibility of collaboration; a memorandum of understanding (MOU), which outlines areas of potential collaboration without upfront commitment of resources or finances; or a memorandum of agreement (MOA), which specifies financial obligations as well.

The components are illustrated in the table below:

Table 5: Index of the agreement to experiment



04

IMPLEMENT

HOW DO THE VALUE PARTNERS START EXPERIMENTATION ALONG THE NEWLY DESIGNED MODEL?

This section is limited to the initial set-up activities value partners should consider during the design phase. Leapfrog to Value plans to publish a separate implementation playbook.

Measure: Field-testing the metrics

Outcomes: During the implementation phase, metrics and questionnaires can be further refined and the collection of data further streamlined. To refine the tool, iteratively pilot the questionnaire versions and take feedback from people who administer the tools to patients, and the patients who answered such questionnaires, in terms of ease of understanding, the language of questions, and answer options. Testing and comparing two version of the questionnaire can be useful at this stage. To avoid endless refinements, it is best to restrict this measurement stage to the earliest you can get to two to three iterations of the questionnaire (typically in four to six weeks). For longer care cycles in chronic conditions such as TB, rather than waiting for an entire care cycle to end, consider collecting the data from different patients across different points in the patient's journey to ensure comprehensiveness of the testing while minimizing the pilot time.

Costs: Once the final list of metrics are determined, the set can be further evolved during the pilot phase via feedback from staff, and data analysis. The choice between revising some metrics and/or introducing new ones will depend on (a) the quality of data being generated, and (b) the ability to take actions based on the metric.

Deliver: Continuous improvement

Performance improvement loops should be instituted during the actual pilot phase. Consider: (a) Building on existing quality improvement efforts, and leverage proven frameworks and resources (the Institute of Healthcare Improvement (IHI) provides a toolkit that includes the tools and templates for quality improvement projects); and (b) Defining logistics for the improvement cycles, such as constituents of working groups, cadence for meetings, formats for reviewing outcomes and costs in each cycle, and the approach to designing solutions and evaluating improvements.

The timing of each cycle should be designed to work well with the overall experimentation timeline to ensure the improvement cycles do not disrupt experimentation.

Pay: Baseline costs and refining incentives

Establish baseline costs, validate pricing, and build confidence on reliability of data. The sequencing of package inclusions and upside/downside incentives can be determined mutually through provider and payer discussions. It is also important to check for any perverse incentives playing out at this stage to minimize fraud later.

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> *We* ***envision human-centered health systems*** *that deliver better health and societal outcomes at a better cost.*

APPENDIX 1

Case study

How a national health insurance scheme used this human-centered design process

Problem statement

The CEO of a national health insurance authority (NHIA) in an African country is anticipating the tidal wave of NCD patients and associated costs. The scheme wanted to develop a value-based hypertension and diabetes management program.

Approach

First, the CEO convenes a group of value partners, representing a balanced set of perspectives:

- **Payer:** NHIA
- **Provider:** A charitable provider network which provides a third of the healthcare services in the country
- **Patients:** Patient advocates living with diabetes and hypertension
- **Data:** NHIA claims data with their data analytics unit

Leapfrog to Value and its regional affiliate act as expert and neutral facilitators for the design process. The group aligns on designing a human-centered NCD care model starting with hypertension. They aim to evaluate the model for impact on outcomes and for its cost-effectiveness. The objective of the new model is to provide human-centered care and double the proportion of people with well-controlled blood pressure. Through three workshops, they generate a new approach.

The **MEASURE** workshop reveals an opportunity to build on traditional hypertension outcomes metrics which focus on clinical blood pressure (BP) measurement. They add four patient-reported measures that help them understand root causes of impact. For example, they add a four-question survey related to anxiety caused by BP ranges, out-of-pocket (OOP) spending, complications, and patients' experience of care. They believe that having a feedback loop on these parameters will enable them to continually learn and improve the program.

The **DELIVER** workshop reveals opportunities to create a new care model.

- The workshop participant who represents patients helps the team identify that sustainable health behavior change is the main driver for achieving project objectives. An intensive behavior change program will complement the clinical care. Because such services are not part of the insurer's reimbursement policy, the insurer needs a strong business case to include it.

- Considering the sharp drop offs (48% after first diagnosis), the group thought that the program needs to be coupled with strong patient tracking.

Basing the frequency of patient follow-ups on the assessed risk levels was considered important to achieving better outcomes and costs.

The **PAY** workshop was an opportunity to develop new incentives for the charitable provider. Since changing reimbursement policy will take time and required evidence, the group focused on creating non-financial incentives such as recognition, priority reimbursement linked to a key outcome achieved i.e. proportion of people with controlled BP. An IT platform will act as a common thread that ties these three components together.

The next step for the partners will be a written commitment from the value partners to implement their design.

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