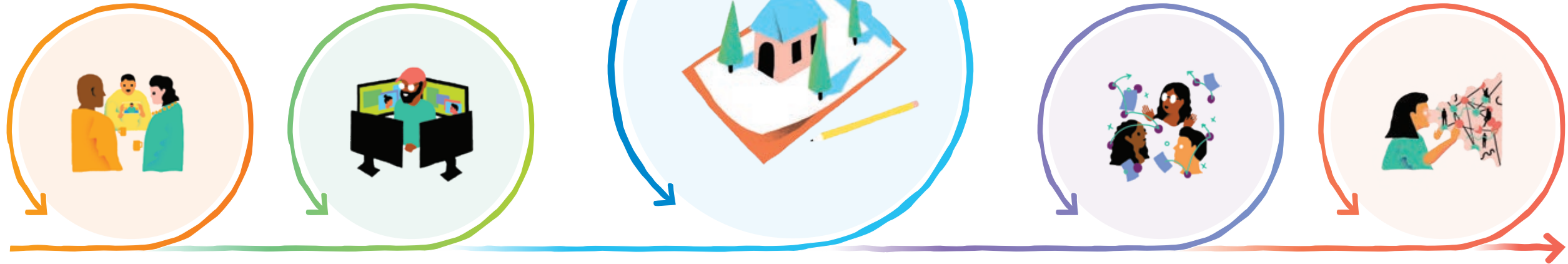




Demand for Health Services **Field Guide**

A human-centred approach

Process overview



What is our objective?

FINAL OUTPUT

Objective statement

1a Prioritize a user group

p. 36

Delineate exactly which community or group we are concerned with.

Key user persona

1b Define the improved state

p. 36

Specify the changed programme outcome that the team is capable of influencing.

1c Describe the biggest obstacle(s)

p. 37

Explain how the user-group is or is not engaging with services and hypothesize barriers to action.

Common obstacles

Objective formula

What do we think we know?

FINAL OUTPUT

Learning goals

2a Assemble existing knowledge

p. 50

Gather available information about the challenge, past efforts and the individual or community in question.

2b Recognize assumptions

p. 51

Avoid bias by documenting the possible assumptions that you and your team might carry with you.

Assumption examples

Assumption catalogue

2c Compose learning goals

p. 56

Clarify what you hope to get out of the research. These learning goals will help determine the research methods to use during Question 3.

Caregiver journey

Field notes map

What stands in our way?

FINAL OUTPUT

Creative prompts

3a Explore the user's environment

p. 66

Choose which activities, including observations and interviews, should be used for research. Collect information in the field. Record what is seen, heard, felt and said.

Research plan template

Discussion guide template

Record field research

3b Interpret collected stories

p. 88

Share information from the field. Identify patterns, surprises and commonalities. Analyse key findings to hypothesize why this is happening.

Diagnostic worksheet

Theme examples

3c Propose design opportunities

p. 108

Translate diagnoses of the root causes of the challenge into creative prompts for developing solutions.

Persona profile

Relationship map

Prompt formula

How could we respond?

FINAL OUTPUT

Tested solutions

4a Conceptualize solutions

p. 120

Generate many possible solutions quickly with an extended team. By the end, we will identify the most promising solutions.

Assess concepts

Solution examples

4b Design quick examples

p. 138

Make ideas concrete by approximating promising concepts through visualizations, models, sequences and role-play.

Design examples

4c Prototype designs with users

p. 142

Take draft ideas into the field to test with, and get feedback from, users.

Prototype planning

Prototype evaluation

How could we improve?

FINAL OUTPUT

Adaptation plan and proven solutions

5a Plan for iteration

p. 158

Devise an 'adaptation plan' for each draft initiative. Define the key evaluative questions, possible risks, measurable criteria and corresponding indicators to track progress over time.

Adaptation plan

5b Evaluate effectiveness

p. 164

Assess each revised idea in the field using the 'adaptation plan' as a guide. Evaluate the accuracy of diagnoses and determine what we still need to learn.

5c Improve initiatives

p. 166

Implement adaptive changes that respond to findings as the improved idea is scaled.

This field guide will help you:

Find new solutions

Integrate thinking from fields beyond public health that employ systems thinking and experimentation to build innovative, scalable solutions.

Save money

Make low-cost adjustments to programmes before scaling a solution.

Close the empathy gap

Collaborate directly with the people we are trying to serve.

Save time

Conduct swift, low-cost field research and test solutions before investing in larger-scale implementation.

Reduce inequities

Identify the most important challenges facing the most disadvantaged.

Contents

Part I. Introduction 02

Welcome! This section provides an overview of the purpose of this resource, an introduction to the methodology and advice on how to get the most out of it.

What is this for? 04

Who is this for? 05

A human-centred approach 06

Why now? 08

How is this different? 10

Part II. Guiding principles 12

Each principle is grounded in evidence and offers a way of thinking about users—the people health programmes try to serve—a little bit differently. Taken together, these principles will be helpful at each step in part three.

Small is big 14

Knowing is not enough 16

Intentions are not actions 18

Truths are buried 20

Context comes first 22

Attention is elsewhere 24

Part III. Five big questions 26

Part III is the heart of this field guide. It presents five general steps—or five big questions—to move through when investigating and responding to challenges involving users.

What is our objective? 32

What do we think we know? 46

What stands in our way? 60

How could we respond? 116

How could we improve? 152

Conclusion 167

Additional resources and background information are available for reference.

Additional resources 170

About this guide 171

Lexicon 172



Part I: Introduction

A new approach to demand for services

This field guide introduces human-centred design as an approach to address challenges related to community demand for basic health services such as immunization.

Human-centred design is a problem-solving process that begins with understanding the human factors and context surrounding a challenge. It requires working directly with users—the people who use the service or deliver the solution—to develop new ideas that are viable and appropriate in their context.

Designing for people and their everyday actions helps uncover and solve the right problems using local capacities and minimal resources. This process is important because it asks us to:

Use participatory methods. No expert has more knowledge than a caregiver, nurse or a community health worker about how to solve their most pressing challenges. The methodologies in this toolkit acknowledge this by focusing on collaboration and designing with—not for—the people we seek to serve. Problems are defined locally and solutions are developed locally.

Be inclusive. We cannot design sustainable solutions if we do not consider the full complex, dynamic and interconnected system. Observing and interviewing, not only with those who fall within the average set of circumstances, but also outliers who represent a more diverse set of circumstances, forces us to reexamine

existing assumptions and to include the perspective of all genders, belief systems, social circumstances and family dynamics.

Think critically. Putting people at the centre of the process means that we uncover needs that service providers and programme recipients may not know they have—even though these needs influence actions and decisions. After honing skills of listening and observing we see more than what is visible and hear more than what is said. This allows the unexpected to reveal itself and points us toward new solutions.

Design to hand-off. From the beginning, solutions are tested in the real world with real stakeholders, not with consultants in an office. Solutions that make it past this “prototype” step lend themselves to local ownership because the community and health workers have been involved in their development from the beginning. The outcome is action-oriented, implementation-ready examples—not static reports.

The human-centred process and tools are relevant to a broad range of health programmes that depend on generating community demand for services. Please adapt and deploy this approach for your own programme priorities.

What is this for?

This resource provides a methodological toolkit to address situations where health services are available but a subset of the intended population of clients are not actively seeking them.

It helps us understand the underlying drivers and barriers for desired health-seeking behaviours and what we might do to improve uptake of services. The approach provides a structured process for working directly with users (i.e. caregivers) to address demand-related challenges associated with the acceptability, responsiveness and quality of services.

Using examples from immunization, the following three scenarios demonstrate some of the complex challenges a human-centred approach is well suited to address:

Availability fails to drive demand¹

Immunization camps—a newly implemented outreach effort—have made significant advances in making immunization more available (physically accessible) for a particularly hard-to-serve population. In recent surveys, this population has expressed a near-universal desire for vaccination services, yet a recent evaluation of the outreach programme found that a sizeable majority of this population is still not actively seeking services.

Efforts to promote demand backfire²

In response to a pocket of vaccine resistance among a subset of a certain population, a regional immunization programme launched a large-scale communications campaign. Messaging emphasized the life-saving benefits of vaccines.

In follow-up surveys, researchers discovered that instead of decreasing resistant attitudes, the campaign increased them.

Proximity to services does not predict coverage³

An assessment of inequities in immunization outcomes revealed sharp differences between communities within a district. A programme team began planning new ways to expand access.

During its planning, the team encountered a confounding paradox: in areas where coverage is high, caregivers tend to walk long distances to seek out immunization services. In areas where coverage is low, caregivers live closer to immunization services.

¹ Generalized example based on empirical evidence from: Banerjee, et al. (2010), *ibid.*

² Generalized example based on empirical evidence from: Meszaros, et al. (1992), *Cognitive influences on parents' decisions to forego pertussis vaccination for their children.*

³ Generalized example based on empirical evidence from: Holte, et al. (2012), *The decision to vaccinate a child: An economic perspective from southern Malawi.*

Who is this for?

This field guide exists to help health professionals investigate, understand and respond to opportunities and challenges (drivers and barriers) related to health-seeking behaviours.

We invite and encourage anyone who is observant, curious and inquisitive to follow this process. You are qualified to practice human-centred design if:

You can see the world with a beginner's mind.

This process is for anyone who is willing to look at the world with more questions than answers. It embraces a 'beginner's mindset' that can find the small, often overlooked opportunities for change. Our 'expert mindset' can be full of assumptions and biases that prevent us from seeing the full spectrum of possibilities.

You are looking for new and tailored solutions.

Human-centred methods reveal insights into the subjective, contextual information that is the basis of most behaviours, and therefore the basis of new solutions. Sensitivity to social and cultural context as well as personal histories and experiences make the human-centred approach right for tailoring solutions to local problems.

You are willing to embrace constraints.

We rarely begin with a clean slate. This process focuses on who and what already exists in a given context, not an idealized version of a situation. It works well with the processes already in use by many UNICEF programmes and calls upon your innate abilities to recognize assumptions, identify patterns, embrace possibilities and learn from initial miscalculations to effectively respond to challenges.

You want to end with more than a research report.

This process is for teams looking to shape behaviours, interactions, services and outcomes that align with strategic priorities already in place. For those who are action-oriented, the second half of the process demonstrates the power of design to activate research, involve communities and launch solutions.

A human-centred approach

This process emphasizes both the perspective and participation of the people we are trying to serve at every step — including the services, institutions and communities that surround and influence them.

All health services are designed, including the way they are operated, promoted and delivered. The human-centred approach helps us improve the design by focusing on how and why people engage, or do not engage, with these services in order to achieve results.

A planning phase that uses a wide systems view.

The approach insists that we consider the constraints, opportunities and interactions of an existing ecosystem. The diagram on the following page illustrates the people and dynamics that must be considered.

A research methodology that focuses on in-depth interactions with people.

We arrive at projects with expertise, but are usually solving problems we do not experience ourselves. Asking people how they view the challenge, or how they might envision a solution, helps span this empathy gap. To reach new communities in new ways, we start by entering their world to speak with them and observe their experiences. The participatory methods

used in the research phase carry into the design and implementation phases.

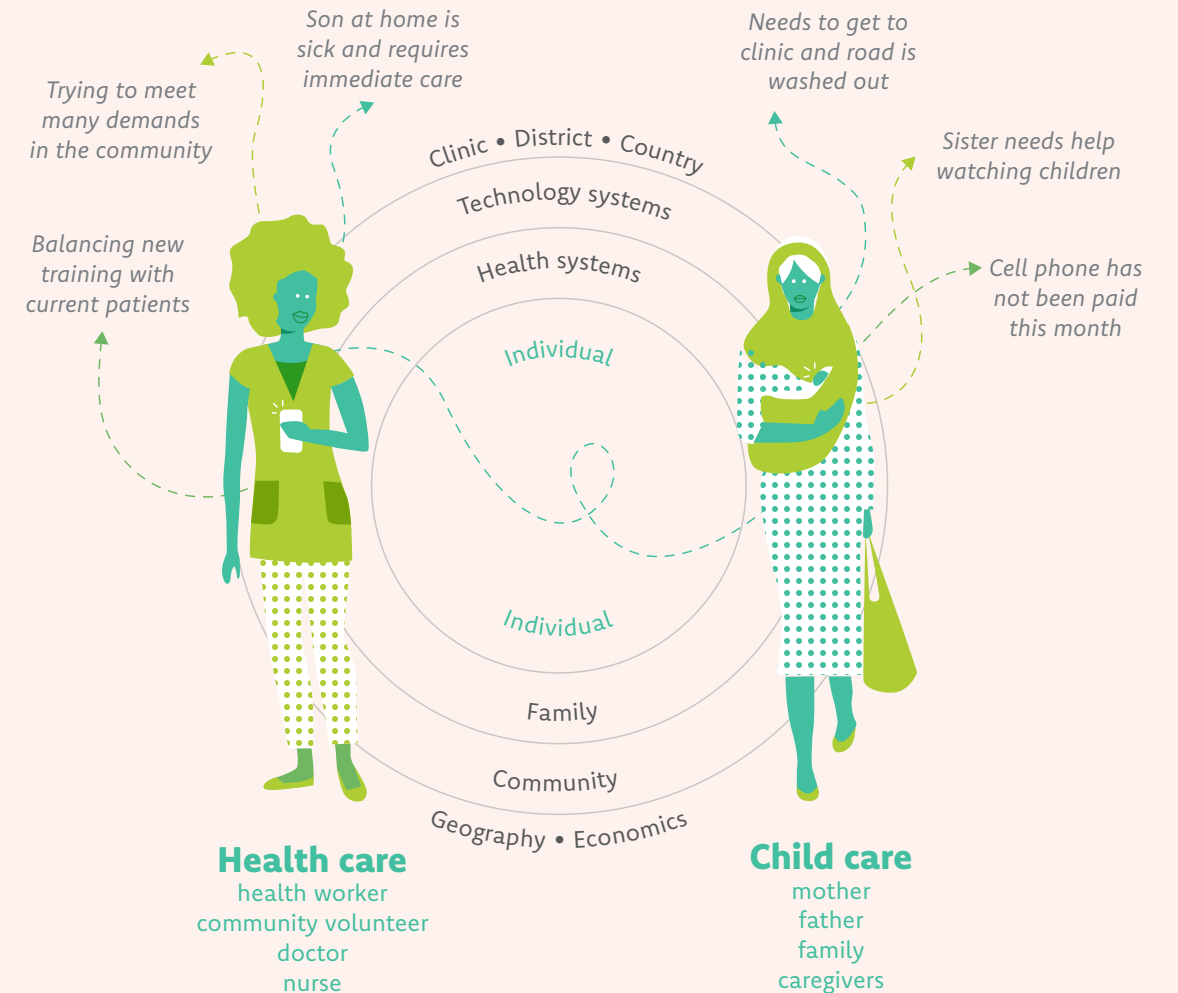
A design methodology that allows for the generation of innovative solutions.

Involving and prioritizing the people we are trying to reach in both the design and testing of interventions uncovers solutions that serve the broadest range of audiences, situations and experiences, from the average user to the 'outliers.' In addition, diversity within a team brings in thinking from other fields of practice to build innovative, scalable ideas.

An implementation strategy that plans in advance for adaptation.

Instead of starting with what we can make and pushing that out to people, this process ensures a focus on ideas that are locally appropriate and desirable. Solutions are made into physical examples (prototypes) that can be tested in context with the people who will need to use them. Along the way, low-cost adjustments are made to ideas in an iterative approach to refine and improve solutions.

The diagram below demonstrates a systems view of an individual's ecosystem.



Why now?

Prioritizing vulnerable groups, better understanding the constraints they face and resolving the challenges preventing them from accessing vital health services has a fresh urgency.

Global health efforts have historically invested primarily on the supply-side of the equation, with the implicit assumption that if we make services available, the community will use them. This assumption is often incorrect. If we think beyond the terms of service availability to include demand-related considerations like acceptability, appropriateness, responsiveness and perceived quality of services, we find better solutions.

A focus on equity

The global health community has underscored the importance of prioritizing the most susceptible populations rather than exclusively focusing on coverage.⁴ This pro-equity principle requires that health programmes systematically identify and reach the least visible and most marginalized to achieve coverage with equity.

We need to better understand the challenges facing vulnerable groups and identify opportunities to improve the way services are provided. This makes human-centred approaches all the more important—an emphasis on the lives and lived environments of the communities health programmes intend to serve.

This field guide provides principles and a structured process to achieve more equitable health outcomes.

A focus on demand

Any programme providing health services requires that users accept and seek out those services. When that does not happen, demand fails to meet supply.

In the context of immunization, “demand is defined as the actions of individuals and communities to seek, support, and/or advocate for vaccines and immunization services. Demand is dynamic and varies by context, vaccine, immunization services provided, time and place. Demand is fostered by governments, immunization program managers, public and private sector providers, local leadership and civil society organizations hearing and acting on the voices of individuals and communities.”⁵

The global health community has increasingly highlighted the need to pay greater attention to demand and the human factors that often determine the successes or failures of programmes.⁶ This field guide is a response to this important elevation of focus on demand for basic health services such as immunization.

Demand is about behaviour

Challenges of demand revolve around decision-making and action taking. Drivers to action (such as timely reminders to activate intentions) and barriers to action (such as social distance or poor perception of services) can influence caregivers decisions to:

- Bring or not bring their children to a health facility
- Seek or not seek a health service
- Return or not return for subsequent appointments

In other words, demand is about behaviour—the complex drivers and barriers that influence how people do or do not make decisions and take actions. **To increase demand for health services we must better understand the perspectives and needs of both the people we are trying to serve and the health workers who provide the services.**

⁴ World Health Organization (2014), *Making fair choices on the path to universal health coverage: Final report of the WHO Consultative Group on Equity and Universal Health Coverage*.

⁵ Hickler, et al. (2017), *Efforts to Monitor Global Progress on Individual and Community Demand for Immunization: Development of definitions and indicators for the Global Vaccine Action Plan Strategic Objective 2*.

⁶ *Reaching Every District and Reaching Every Community Strategy: A literature review and status report on strategies for reducing immunization inequities in Africa* (2015).

How is this different?

Work in a team of three to five

While input from many parties is important, it can lead to a slow process. There are moments—such as brainstorming—where you will invite additional participants to join. But start with a core team of three to five members that will participate in the entire process.

Leave your desk behind

Regardless of formal training, you are capable of leaving your desk and going into the field to observe and investigate challenges. Go to where the problem is, interview health care workers (HCWs) and observe caregivers.

Recruit diverse roles

Ideally, each team member holds a different role so your team has diverse and complementary perspectives. Consider team members' breadth of experiences, not just titles and functions.

Share a story

Facts are important, but stories make facts memorable. Share your stories from the field. Who did you meet? What did you see? How did you see it in a new way?

Think in weeks, not months

Work fast and be nimble. This entire process may be completed in a short amount of time. It should never drag on for months. It relies on quick trials and tests to move forward with confidence.

Make it tangible

Mock-ups, sketches and role play give users a physical representation to experience and react to. Even a rough approximation of your idea will create clarity for you as the creator and allow for realistic feedback from users.

Experiment and experiment again

Since this process occurs in short sprints, it encourages experimental trials that may not always work out. That is okay—instead of agonizing over the perfect solution, try many possibilities and learn just as much from what does not work as from what does.

Remember, everyone is creative

This process benefits from everyone's creativity, not just those who hold design positions. Everyone is familiar with the challenges and therefore capable of thinking about causes and designing solutions.

Part II: Guiding principles

Thinking about people

Health programmes are people programmes. At every step of the way they involve people, from government officials to community health workers. Perhaps nowhere is the involvement of people more important than with users, or the people for whom programmes exist. Understanding the constraints under which users make decisions and take actions is essential to expanding the reach and impact of health services — particularly for the most vulnerable.

As many public health experts know, the contrast between how a programme is designed and how it works can be stark. Often, that is due to overlooked or less understood factors regarding how people actually behave in the real world, as opposed to how we assume they will behave.

The following six principles are intended as reminders when investigating and responding to demand-related challenges. They are grounded in what we know to be true about human behaviour and can improve the effectiveness of our efforts.



“Many parents do not seem to reflect deeply about whether or not to vaccinate their child, and their decision often seems to be based on rules of thumb and limited information.”

Cappelen, et al. (2012), *Demand for Childhood Vaccination: Insights from Behavioural Economics*.

PRINCIPLE #1

Small is big



Often, **seemingly small variables have outsized impacts on programme outcomes.** We have a tendency to overlook these small things, such as the inconvenient barriers of dealing with health programmes that users face—especially when small costs seem to pale in comparison to the enormous benefits of receiving the service. Because people do not always make reasoned calculations weighing costs and benefits, these small things can dominate decision-making.

Consider a mother who has lost her child’s health card for immunization. She might think: Will the health worker scold me when I arrive at the clinic empty-handed? Will I feel ashamed? Am I even allowed a vaccine without the card in hand? What began as a small event—a lost card—might lead to a big one, such as a drop-off in immunization and a child at risk of disease. **Despite the benefits of an immunized child, minor problems (like the fear of getting scolded) shape outcomes.**

This suggests paying more attention to what might initially appear small. Efforts to address the smaller things can sometimes be more impactful than addressing seemingly bigger, more obvious challenges.

CASE STUDY

Minor details have an outsized impact⁷

In Pakistan, data showed a significant drop-off between infants’ first dose of diphtheria-tetanus-pertussis (DTP1) and the third dose (DTP3).

Upon investigating the problem, researchers noticed a common challenge for many of the mothers: The physical reminder card that they received after the first dose of the vaccine was difficult to interpret.

The standard card presented mothers with two challenges:

- It was too small—9cm by 8.5cm when folded. The information appeared crowded and disorderly.
- The next immunization date—the most critical piece of information—was handwritten by the staff at the clinic, often in cramped and irregular letters. Less literate mothers in particular had trouble reading it.

In a randomized controlled trial, the research team adjusted the card’s design to simplify the information and make it easier for the mothers to understand. Some mothers in the trial received cards that were:

- **Bigger:** The card was larger—15.5 cm by 11.5cm when folded.
- **Eyecatching:** The card was bright yellow and used pre-printed stickers with 42-point font.
- **Harder to lose:** The card was placed in a plastic jacket with a hanging string.
- **More legible:** Only essential pieces of information were included on the outer sides of the card, which the mother could see at a glance; the next immunization dates and day of the week.

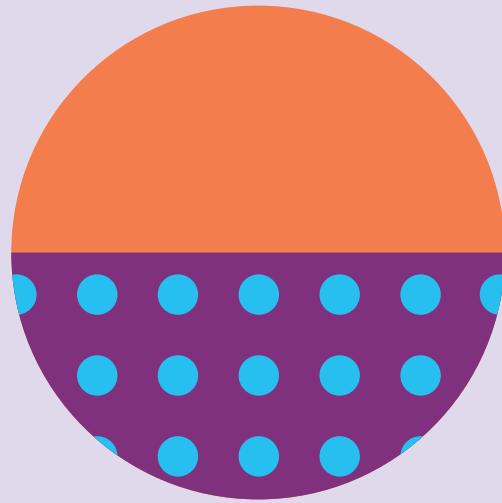
These small adjustments had an outsized impact: 67 per cent of the redesigned card group completed the immunization schedule, compared with 39 per cent of those who received the standard card. Furthermore, the intervention was cost effective: each new card cost only 5 cents to produce.

Small, cheap and effective—this example of success was made possible by closely observing the challenges, however seemingly minor, facing intended users.

⁷ Usman (2011), ‘Randomized controlled trial to improve childhood immunization adherence in rural Pakistan: Redesigned immunization card and maternal education’.

PRINCIPLE #2

Knowing is not enough



A common assumption is that knowledge is directly linked to behaviour, that information and education are enough to drive behaviour change, but research suggests otherwise.⁸ Knowing about a health service, having an accurate understanding of its benefits and understanding how it works, does not necessarily correlate to high levels of uptake.⁹

Conversely, in many cases people with little or even inaccurate knowledge of how health services like immunization work are nevertheless diligent in getting their children fully vaccinated. For example, in the following case study a survey among mothers revealed low levels of knowledge along with significant misperceptions. Yet, full childhood immunization was high among many of these same caregivers. Perhaps these mothers feel that getting their child fully immunized makes them good mothers, or perhaps they simply do what they think their neighbours are doing.

It is often tempting to start with interventions that inform and educate the public about the value and usefulness of health services. But focusing on knowledge alone might take time and resources away from more effective strategies. When we accept that **it is possible to alter behaviour without ever changing what is in someone's mind, we open ourselves to to a much larger universe of potentially effective solutions.**

⁸ Layton D, Jenkins E, Macgill S, Davey A. (1993), 'An inarticulate science? Perspectives on the public understanding of science and some implications for science education'.

⁹ Favin, et al. (2012), 'Why Children Are Not Vaccinated: A review of the grey literature'.

CASE STUDY

Behaviour is influenced by more than knowledge¹⁰

Mozambique's Ministry of Health instituted an expanded immunization programme in 1979, but by the early 2000s, full coverage rates remained low in many parts of the country. In 2002, researchers set out to understand the barriers standing in the way of improved coverage, from the attitudes of mothers and vaccine access, to interactions with HCWs.

A main objective was to determine what mothers knew about the subject. The study found that mothers' knowledge was generally low. For example, a majority had no knowledge of key facts about vaccine-preventable diseases, or the ages at which a child should have completed various vaccinations. Further, many held misconceptions, such as whether it was safe to vaccinate a sick child; nearly one third thought it was not.

One might expect that this gap in knowledge would negatively affect uptake. But despite misconceptions and significant gaps in knowledge, mothers in Mozambique overwhelmingly perceived vaccination as important to a child's health and actively sought out vaccines for their children. In fact, in an area where misperceptions were more

widely held, coverage rates were actually higher. As the researchers found, "detailed knowledge about vaccine-preventable disease is not necessary to create or maintain demand—study results show that knowledge is low while demand is high."

The case highlights a common assumption: that there is a causal correlation between knowledge and behaviour. Across studies, the relationship is usually more complicated. A study in the Gambia found that nearly half of rural mothers could not correctly name any vaccine-preventable diseases, yet still actively sought out vaccines (national coverage was 90 per cent).¹¹ In the case of Mozambican mothers, the lack of a robust understanding also mattered little when it came to seeking out vaccinations.

Whereas practical knowledge about when, where and how to access vaccinations can matter greatly, knowledge about vaccine-preventable diseases and vaccines themselves are often less directly tied to immunization outcomes. Investing in the enhancement of knowledge alone will not necessarily yield an increase in coverage.

¹⁰ Sheldon and Alons (2003), 'A study to describe barriers to childhood vaccination in Mozambique'.

¹¹ Leach and Fairhead (2008), 'Understandings of immunization: Some West African perspectives'.

PRINCIPLE #3

Intentions are not actions



An intention to participate in a health programme does not always mean actually participating, and the act of getting participation is not necessarily preceded by an intention to do so. **Intentions can be poor predictors of corresponding actions.**¹² Raising awareness of a programme's benefits, for example, may help people to form positive intentions. Learning that a vaccine could save your child's life can incite a powerful form of motivation. **Behaviour depends as much on removing the barriers to taking action as it does on forming intentions.**

For example, a caregiver might report in a survey that she fully intends to get her child vaccinated, but taking a day off of work to travel to the clinic is simply not an option; or she is not clear on where exactly to go; or the clinic's opening hours are inconsistent, and she is not sure if making the trek will be worth it. The opposite may also be true: If a caregiver has no intention of seeking out vaccinations, but sees others in her community going to the clinic, she may go too.

Intentions may not lead to actions. Instead, **we should focus on what it takes to get caregivers to act.**

¹² Webb and Sheeran (2006), 'Does Changing Behavioural Intentions Engender Behaviour Change? A Meta-Analysis of the Experimental Evidence'.

CASE STUDY

Address barriers to action¹³

In Thailand, outbreaks of influenza have had grave consequences. In 2008, the H1N1 pandemic infected 8.4 million people and caused 191 deaths. Despite these headline-grabbing figures, a free vaccination programme spearheaded by the Government only resulted in 38 per cent coverage in its first year.

To improve coverage, one programme designed a leaflet using a two-phased approach. First, it sought to motivate recipients to vaccinate by providing information that, for instance, increased perceptions of the personal risk of getting the virus. Second, the leaflet helped recipients with an action plan, including a fill-in-the-blank form about their planned appointment at a health facility. The programme's stated goals were to strengthen intentions to seek an influenza vaccination and translate these intentions into behaviour change.

The programme achieved its first goal: recipients of the new leaflet had much stronger intentions to vaccinate compared with a control group that received a traditional leaflet. However, there was no significant difference between a control and an intervention group regarding actual vaccination behaviour.¹⁴ Increased intentions did not lead to action—something more was needed.

The findings affirm that immunization programmes should be designed to facilitate the full journey to vaccination, not simply to change attitudes, risk perceptions or stated intentions. That effort requires correctly diagnosing and addressing the particular bottlenecks preventing individuals from turning positive intentions into corresponding actions.

¹³ Payaprom, et al. (2011), 'Using the Health Action Process Approach and Implementation Intentions to Increase Influenza Vaccine Uptake in High Risk Thai Individuals: A controlled before-after trial'.

¹⁴ While action plans (also referred to in this field guide as 'implementation intentions') can be a helpful tool to bridge intention and action, its unsuccessful use suggests that this solution did not adequately address the barriers contributing to the intention-action gap.

PRINCIPLE #4

Truths are buried

What people believe, say and do can be three different things. During field research, we cannot assume consistency between what people say about themselves and their actual behaviour.

Consider a survey that asks the question, “Why is your child not immunized against x?” A caregiver might respond that the transport costs were just too high. It might be true that transport costs are high, but do we know that is actually the reason? Perhaps the caregiver had never really ever thought about why she had not gotten around to accessing immunization services. It was not until now—until faced with the question—that she came up with what seemed like a plausible explanation.

How we explain our own behaviour is not always accurate. **We often edit our responses to questions to ensure they are consistent with each other and socially desirable. We struggle to adequately recall past situations because our memories are far from perfect. We are easily influenced by the ways that questions are worded and framed.**^{15,16}

What people say is prone to error. **This makes it critical to disentangle what people self-report about their behaviours from what is actually happening.** We do this during field research by combining interviews (asking people what they think and feel) with observations (watching what people say and do).

15 Podsakoff, et al. (2003), ‘Common Method Biases in Behavioural Research: A critical review of the literature and recommended remedies’.

16 Schacter (1999), ‘The Seven Sins of Memory’.

CASE STUDY

What people say is not always what they think or do¹⁷

One medical anthropologist in Malawi uncovered contradictory evidence. The self-reported data gathered by a knowledge, attitude and practice (KAP) survey was different from the qualitative data gathered from interviews, focus groups and participant observations.

The survey, which investigated issues of malaria during pregnancy, was used to interview 248 respondents. It asked about the quality of service at a local antenatal clinic. Survey responses were largely positive. However, during in-depth interviews, mothers voiced criticisms of the clinic’s services.

The researcher investigated what might explain the discrepancy: Mothers assumed that the survey was being conducted on behalf of the health centre itself, and that a negative response might impact the treatment they would receive in the future. More generally, the researcher posited, Malawians are simply “a polite people” and

“dislik[e] the idea of conflict.” Without the probing discussion that naturally occurs during in-person interviews, mothers chose the ‘kinder’ response in the survey that did not reflect what they actually believed. Respondents were demonstrating social desirability bias—a tendency to say what we think others want to hear.

If the researcher had taken the results of the survey at face value, a programme might have focused on other issues while assuming that mothers were happy with the services. What people say is not always what they think. Uncovering the determinants of attitudes and behaviours requires continuous investigation, approaching questions from multiple angles and calling surface-level and initial responses into question to see what is buried beneath.

17 Launiala (2009), ‘How much can a KAP survey tell us about people’s knowledge, attitudes and practices? Some observations from medical anthropology research on malaria in pregnancy in Malawi’.

PRINCIPLE #5

Context comes first



One of the more common terms in public health is ‘behaviour change’. There are entire fields devoted to the topic, and for good reason. The solutions to many problems require changes in the way that people behave. However, **a singular focus on behaviour change can be misleading.**

Consider a neonatal clinic that has recently redesigned its intake system to decrease waiting times for immunization. Follow through rates were a problem, and waiting times were regularly cited as the cause. With a change in how patients are directed through the clinical environment, we see changes in behaviour: Fewer dropoffs and more children fully immunized. The focus was not on asking users to change their behaviour; users were not being asked to do much of anything. Instead, the programme altered the clinic’s environment to fit users’ preexisting preferences, such as not wanting to wait in long lines. The change was made to the context, not the person.

The distinction may seem slight, but is important. **Changing the context in which people behave often has more powerful implications for behaviour change than directly asking that people change their behaviour.**¹⁸ This means thinking more about the ways that services are being supplied, even when we are addressing challenges related to demand.

¹⁸ Ross and Nisbett (1991), ‘The Person and the Situation: Perspectives of social psychology’.

CASE STUDY

Adapt environments to suit people’s needs¹⁹

People do not like waiting in line, whether in a supermarket or in a clinic waiting room. Long wait times have been associated with failure to complete an immunization course;²⁰ busy parents do not have the time to waste. In Lagos, Nigeria one initiative to address high dropout rates took a careful look at the intake process of a local health clinic.

After mapping the journey of a patient, the researchers identified an opportunity to make a simple change to the patient intake experience. They divided the waiting room into two groups: Mothers coming to immunize children were separated from all other patients. The clinic created

a special immunization station where caregivers were directed after checking in at reception. There was no need for the usual procedures of taking a patient’s history and administering a physical examination.

This administrative change led to a 24 per cent increase in monthly vaccinations performed—with no cost increase whatsoever. The percentage of registered children fully immunized by age 1 increased by 18 per cent and after age 1 by 32 per cent. A small, deliberate change to the clinic environment yielded outsize changes in outcomes.

¹⁹ Ekunwe (1984), ‘Expanding immunization coverage through improved clinic procedures’.

²⁰ Favin, et al. (2012), ‘Why children are not vaccinated: a review of the grey literature’.

PRINCIPLE #6

Attention is elsewhere

Most people, most of the time, are not thinking about health services.

When they are, it is not always (or often) given very deep reflection—or even much reflection at all. Consider a mother with three young children. Crime in her neighbourhood is high and schools are underperforming, so she is conducting at-home supplemental education. Her partner’s job does not support the entire family, so she is also responsible for generating additional income. All of this, in addition to many other day-to-day responsibilities, means she is juggling many things at once.

We have the tendency to assume that people consider the universe of possible costs and benefits before making a decision. But that requires a lot of thinking. Instead, **most people make most decisions quickly, without much reflection, and with many other priorities vying for focus.**^{21, 22} In the stressful context of poverty, it is safe to assume that vaccination will not be the first priority.²³

If we remind ourselves that most people spend little time thinking about health services, we will ask less of users and make our programmes simpler, and easier to use.

21 Wheatley and Wegner (2001), ‘The Psychology of Automaticity of Action’.

22 Kahneman (2003), ‘Maps of Bounded Rationality: Psychology for behavioural economics’.

23 Shah, et al. (2012), ‘Some Consequences of Having Too Little’.

CASE STUDY

Reduce cognitive burden for stressed caregivers²⁴

In poor areas of Pakistan, low parental literacy presents vaccination programmes with a challenge. In Karachi, the site of an intervention in 2008, only 24 per cent of the population in the study areas was literate.

Acknowledging this barrier, researchers made a minor redesign to educational materials provided to caregivers during home-based outreach efforts. The redesigned materials consisted of easy-to-understand pictorial cards with only three messages for mothers to process. The messages conveyed included:

- That vaccines save children’s lives
- The location of local vaccination centres
- The significance of retaining home-based health records—including how they could help at the time of a child’s admission to school.

The messages took just five minutes to communicate, and a copy of the materials designed for low-literacy audiences was given to mothers after the

interaction. Each set of materials cost Pakistan Rs. 80 (approximately US \$1).

The study tapped into an important insight about the presentation of information. In addition to addressing low literacy, the pictorial messages, which took little time to explain, eased the cognitive burden on stressed and busy mothers; they did not require mothers to think too hard about them. Pictures proved easier to process and recall than the verbal messages that mothers in a control group received.

Seventy-two per cent of infants in the intervention group completed the vaccination programme, compared with 52 per cent in the control group. (Additionally, 81 per cent in the intervention group retained their home-based records, whereas 69 per cent did so in the control.) The programme’s design exhibited empathy with mothers whose attention is often stretched thin by other responsibilities. The low-cost intervention asked less from mothers, providing comprehensible information through a simple format in less time.

24 Owais, et al. (2011), ‘Does improving maternal knowledge of vaccines impact infant immunization rates? A community-based randomized-controlled trial in Karachi, Pakistan’.

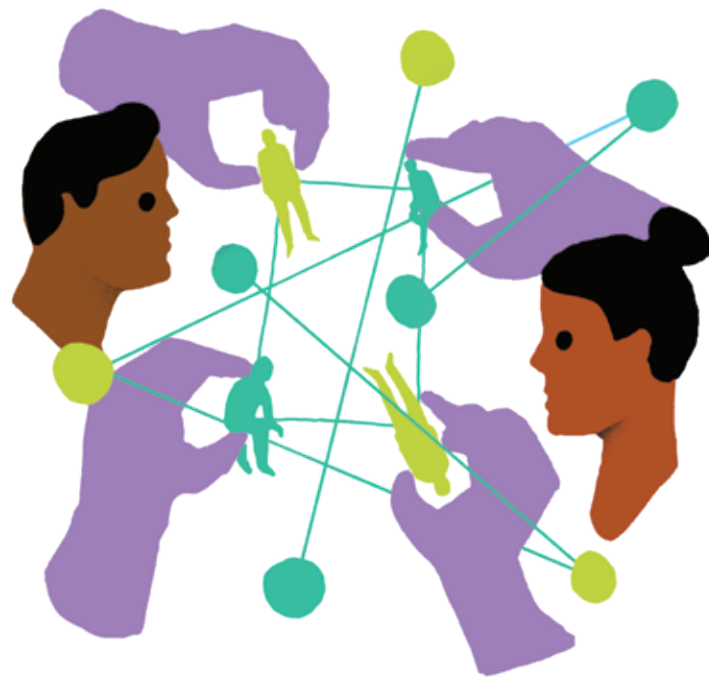
Part III: Five big questions

Questions before answers

Variance in contexts, communities and challenges makes standardization of solutions difficult. Instead of starting with solutions, the human-centred approach emphasizes questions to ask and activities to pursue when investigating challenges involving people.

The human-centred process is shaped by five phases, or five big questions. Moving through these five questions will guide your team's problem-solving approach. Together, the answers will support your ultimate objective of improving equitable coverage for your initiative.

These questions are sequential and build upon one another. It is likely that your team has already spent a lot of time considering some of these questions, so use this as a checklist. Evidence-supported answers to each will help your team understand and respond to the challenges facing users and preventing improved outcomes.





Five big ?s

1

What is our objective?

We start with the prioritized user group—the caregivers we want to reach. From there, we define the intended programme outcome as a measurable goal and concentrate on the biggest obstacles we will set out to address and further research. The final objective statement focuses our work through all subsequent activities.

Page 32

2

What do we think we know?

This phase is about understanding the local knowledge that already exists from past efforts and research (successful and not). It then requires taking stock in what we still do not know and asking ourselves: What might we be assuming? What might we suppose we know more about than we really do? We end up with a clear set of learning goals to bring into user research.

Page 46

3

What stands in our way?

What prevents users from using services? What do they do now and what do we want them to do? To find out, we conduct user research. Without understanding user behaviour, interventions are expensive guesses that might not produce results. User research should identify and explain the variables facilitating or preventing people from engaging with a programme. The result is a set of specific challenges to solve.

Page 60

4

How could we respond?

Given what we know about users, how can we shape their environments and influence their behaviours to achieve our objective? We start by generating a large number of potential solutions including communications, clinic experiences, incentives and reminders. Once we identify the best ideas, we test them with users. This is a creative and collaborative process; generating ideas and testing them out.

Page 116

5

How could we improve?

Good ideas are not only innovative, they are also effective. This last phase is about continuous inquiry—measuring how the ideas respond to the challenges identified during user research and making adjustments to improve their efficacy. Implementation begins with defining performance indicators and continues as an exercise in ongoing user research.

Page 152

Before you begin

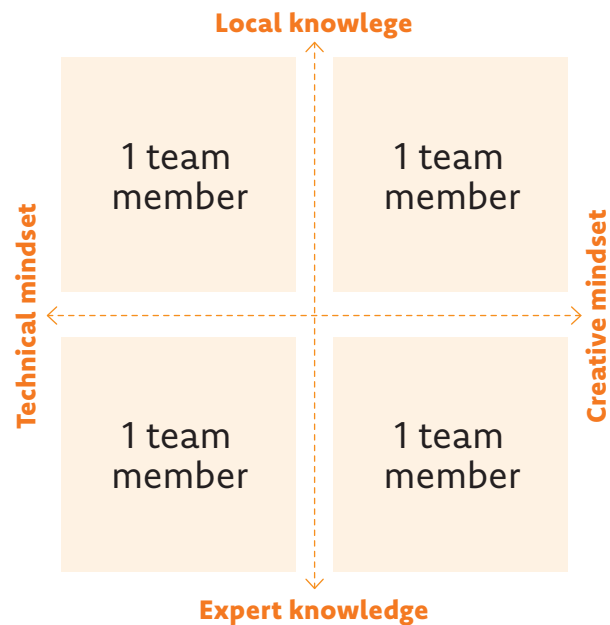
Build your team

While input from many parties is important, it can lead to a slow process that tries to appease too many people along the way. To work collaboratively, but not slowly, take these two steps when building a team:

First, start with a core team of three to five members inside UNICEF that will participate in the entire process. Ideally, each person holds a different role so your team has diverse and complementary perspectives. The matrix below shows how you might think about this—combining team

members with different knowledge sets and mindsets. This team is the advocate of the project, supports consultants when/if they are needed during execution and creates excitement within UNICEF around the project.

Second, identify one to two champions in the Ministry of Health to engage the government, local authorities and local health workers. Alone we may go fast but we cannot go far—so have the support and active engagement of officials capable of instituting change.

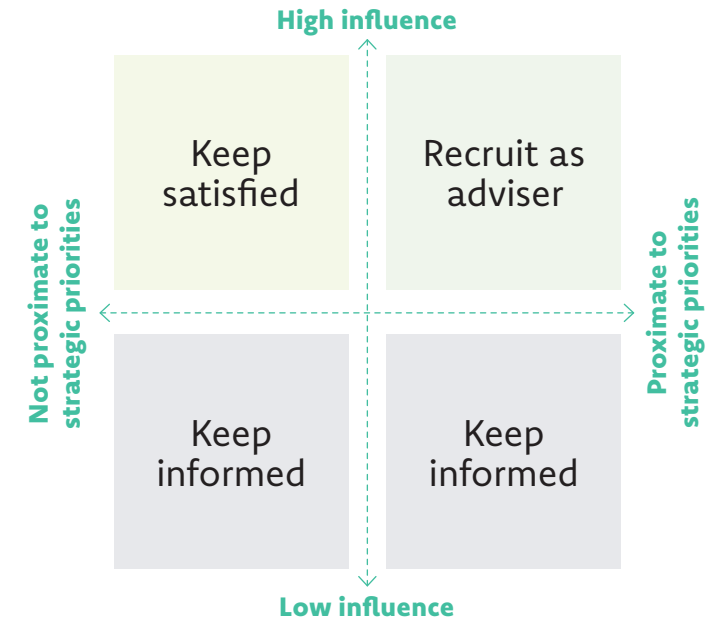


Choose your advisers

Finding the right advisers and aligning with existing priorities will secure political support throughout the process. Even if they are not familiar with digital health deployments or human-centred design, influential leaders can help get approvals during field research, recruit partners, find funding for the implementation and help navigate bureaucracy along the way. The matrix below, combined with the questions that follow, should guide you to choosing two to three advisers that have influence and knowledge.

When choosing your advisers, ask yourself:

- Who must be involved in decision-making?
- Who will be affected by this work and is interested in its success?
- Who should influence how it evolves?
- How can we work with existing government and community partners?
- What existing priorities and strategic plans can we align with?



What is our objective?

Introduction: Problem definition

As with any health intervention, we start with the outcome we wish to achieve. This section provides a structured approach to arrive at a precise objective.

An objective shapes all of the work to come and significantly influences the ways in which we go about solving problems: The research we design, the challenges we focus on, the findings we prioritize and the indicators we select.

After answering this first question, you and your team will have a straightforward mandate to focus your work throughout the process.



1 Methodology

Our objective is an immunization programme goal over a specific period of time; how we aim to broaden coverage and shrink inequities among a particular population. Throughout the process, we will tie all of our interventions in the field directly back to our starting objective.


1a: Prioritize a user group

 **Time required: Hours**
Team: Pairs (subset of core team)

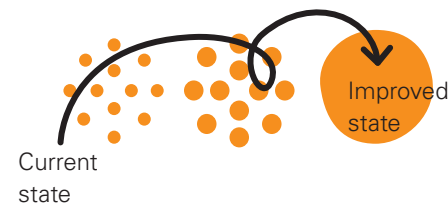
Clearly delineate exactly which community or group we are concerned with.




1b: Define the improved state

 **Time required: Hours**
Team: Pairs (subset of core team)

Specify the change in immunization outcomes that the team is capable of influencing.



1c: Describe the biggest obstacle(s)

 **Time required: Hours**
Team: Core team of 3-5

Explain how the user group is or is not engaging with services.

 **Common obstacles**



Final output: Objective statement

Formulate and document the final objective statement to reference throughout the process.

 **Objective formula**

1a Prioritize a user group

Begin by identifying the group that requires your attention. Use available data to prioritize the people most in need of help. For example, an equity assessment may have recently revealed that a specific group is still persistently underserved. Making a specific population a priority prevents wasting time and resources on general activities directed to an unspecified population.

With this information, compile a 'key user persona.' Personas are fictional characters used to understand the needs, values, aspirations, abilities, limitations and character traits of different users.



1b Define the improved state

First describe the current or baseline state and then set measurable, achievable improvements.

Depending on your context, goals may be set at the national level, or you might have more flexibility in using local programme data to suggest feasible improvements in your immediate context.

Your programme objectives should be within the capacity for you and your team to influence. Set clear, measurable, attainable objectives that you can later evaluate.



1c Describe the biggest obstacle(s)

Delineate the programme challenge

Programme challenges provide a generalized description of how a group of people are or are not using the services being provided. We define the programme challenge in these generalized terms in order to avoid premature diagnoses. Making a diagnosis early on has the potential to mislead our research to validate a preconceived solution instead of leaving us open to innovative possibilities.

A programme challenge is descriptive of the basic relationship between a user group and a health service. Intended users fall into the following categories:

- Make full use of services and attend appointments on time
- Irregularly use services
- Initially use services and then stop
- Never use services

Contemplate the obstacles

After you clarify which of the programme challenge categories your user group is experiencing, start to think about the obstacles and underlying causes that contribute to this current state.

What keeps users from acting or deciding in a way that is most beneficial for them? What do users need the system to do? What environmental factors contribute to the problem? **The biggest obstacles are usually very human, meaning a bias, habit or conflicting priority stands between the user and the desired changed state.**

This step is difficult because it requires describing a problem before we really know the details of the problem. Existing experience and knowledge can show us where to start. At this point, we are not interested in diagnoses, which we will get to after a thorough user research process (Question 3). Identifying a problem too early has the potential to mislead our research and block innovative solutions.

If the data is nonexistent or incomplete at this phase, define the biggest obstacle to the best of your ability. You will return to the objective statement after user research (Question 3) to validate its accuracy or revise it to reflect the additional insights that data alone cannot always uncover.



Key user persona

Developing a 'key user persona' will help your team recognize what they know—and what they currently assume—about the prioritized user group.

Determine realistic combinations of characteristics that together could form a single person. A persona is developed from a range of different sources, pulling together common characteristics of similar people into an archetype through which a group can be understood.

If possible, validate the persona. Get feedback from stakeholders who understand the real people that these personas represent. If you do not know the answer, flag it as an area of inquiry during research.

The initial 'key user persona' will focus the information we gather in Question 2 and direct how we plan for research in Question 3. After research, we will revisit the 'key user persona' and create additional personas to represent their interactions with community leaders, mothers, HCWs, community health workers (CHWs) and other key players.

Place photo / drawing

Background
What important life experiences or events have contributed to this person's current situation? What social determinants of health influence his/her current situation?

Role / responsibilities
Describe what his/her job is, or what role he/she plays in the community.

Name:

Environment
What is the geography and what are the conditions in which he/she lives?

①

②

Influences
Think about single behaviours that result from external pressures (rather than regular habits). Who or what are the influential stakeholders in his/her life?

Needs
What frustrations does he/she have? What limitations does he/she encounter? Write as a quote—how would he/she say this?

“ ”

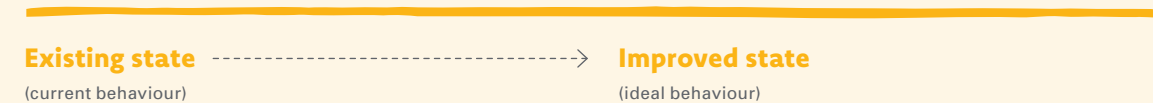
Time
What does a typical day look like? How does he/she divide his/her time? What does he/she spend time worrying about or celebrating?

Morning

Mid-day

Afternoon

Evening



Common obstacles

1. Identify the programme challenge in your area which can be categorized as issues of use, follow through or timeliness. For example, caregivers may be initially using services (use), but only irregularly coming for scheduled visits (timeliness). Or they may be coming for a scheduled appointment (follow through), but coming weeks or months late (timeliness). Or, of course, they may simply not be using services at all (use).
2. Ask why this challenge may be happening, and check all of the obstacles on page 41 (or add your own) that may be contributing.

The biggest obstacles have recurring themes. Competing priorities, demands for attention, conflicting beliefs, habitual behaviours and social pressures are examples of common obstacles that can hinder the desired programme outcome. These are some examples of recurring challenges to prompt new thinking about the problems you witness in your local context.

3. Circle the biggest obstacle. This will be a working assumption that we will question and return to as we uncover more information in user research.

Use:
Is the user group using immunization services?

Follow through:
Do they complete the schedule or does adherence fail?

Timeliness:
Do they have difficulties coming on schedule?

Apprehension about HCWs

Uncertainty or apprehension about capacity, knowledge, compassion or other characteristics of health care workers.

Fear of the unknown

Action is often scarier than inaction. When given an option between inaction and action, people tend to default to habit.

Apprehension about the system

Uncertainty about the health system, government or organization perceived to be providing health services.

Supply inconsistency

Inconsistent supply can affect demand for services, making services (perceived to be) unsafe, unpredictable or of low quality.

Social norms

Perceived group rules that regulate behaviour. Using or participating in this health service is not a social norm or common practice.

Decision paralysis

Ambiguity, uncertainty and conflicting information foster inaction. When next steps and continued actions are unclear, taking any action is difficult.

Incentives

People value an award they choose themselves over receiving an award chosen for them, even when the rewards are equivalent in value.

Lack of efficacy

Health workers lack the input or authority to improve or change services.

Attention scarcity

People focus on the most pressing challenge now, which may not be a routine health service.

Bias towards optimism

People overestimate the likelihood of positive events occurring and underestimate the likelihood of negative events occurring.

Memory recall

The easiest things to recall are recent; the most influential things to recall are personal; the easiest information to retell is in the form of a story.

Ignoring the contrary

People tend to seek out and act on information that conforms to their pre-existing beliefs.

Hassle factors

Seemingly minor inconveniences can deter people from acting on their intentions.

Negative experiences

Bad experiences from the past outweigh the neutral or good.

Final output: Objective statement

The prioritized user group, defined change and described obstacle can be put into a formula to arrive at the objective statement: **Our objective is for **U** (user group) to change from **E** (existing state) to **I** (improved state) by addressing **O** (biggest obstacle).**

The tool on page 44 demonstrates each element of the objective formula. Defining your objective is essential for the following reasons:

Objectives help us to avoid the tendency to jump immediately to a diagnosis.

We start with the ultimate objective of our work: Equitable coverage. Too often, programmes start with a diagnosis instead. For example, unmotivated HCWs are causing steep dropout rates among caregivers. It may be true that some HCWs are not strongly motivated, but perhaps this is correlating to dropouts, not causing them; or perhaps other variables are influencing dropouts more than HCW motivation. By starting with an objective, we avoid prematurely diagnosing the problem before we have adequately investigated and allocated resources to efforts that might not pay off.

Objectives help us avoid defaulting to intermediate goals, such as attitudinal or behavioural goals.

For example, an existing dataset suggests that a certain portion of a community does

not value vaccinations; in surveys, residents self-report skepticism about vaccines' benefits. It may be tempting to establish an attitudinal objective such as 'increase the perceived value of vaccination among mothers.' But do we know that an increase in perceived value will lead to an increase in coverage? Perhaps there is more to the story, and deeper user research later on (Question 3) will help us better understand it.

Objectives help keep our teams accountable, linking our field interventions back to a clearly defined programme goal.

A clear objective acts as the ultimate check on our work: does our intervention lead to positive changes in equitable coverage? Later on we learn to track the progress of our solutions (Question 5), but we are ultimately concerned with the impact of our work. After clearly establishing an objective within a particular context from the outset, we will return to it often.

Compare and contrast

Example #1:

Our objective is for children under 5 of recently arrived migrants in the capital to change from 90 per cent using traditional medicine for managing diarrhea to 90 per cent seeking treatment with oral rehydration salts (ORS) by addressing caregivers' understanding of how to mix and administer ORS.

While the example adequately accounts for the user group and the changed state, instead of identifying an obstacle, it suggests a diagnosis: that the cause of under-utilization of ORS is due to a lack of understanding how to use the treatment. While that may be true, we will wait until user research (Question 3) to fully investigate and substantiate that claim. Instead, consider:

Our objective is for children under 5 of recently arrived migrants in the capital to change from 90 per cent using traditional medicine for managing diarrhea to 90 per cent seeking treatment with oral rehydration salts (ORS) by addressing caregivers' perception of ORS efficacy.

Rather than making a diagnosis in the objective statement, this revised version summarizes the basic relationship between the migrant population and the service: Lack of perceived efficacy.

Example #2:

Our objective is for children of nomadic pastoralists in the North to achieve full immunization coverage by addressing the obstacles and opportunity costs of accessing services at fixed sites by families on the move.

This objective statement avoids diagnosing a problem and clearly articulates the basic relationship between nomadic pastoralist families and immunization services. However, it leaves the changed state unclear: Is the objective to achieve full coverage among all children, or a certain percentage? What baseline is the programme working from? Instead, consider:

Our objective is for children of nomadic pastoralists in the North to change from 35 per cent completion of the childhood vaccination schedule to 80 per cent completion of the schedule by addressing the obstacles and opportunity costs of accessing services at fixed sites by families on the move.

Example #3:

Our objective is for children of an ethnolinguistic minority in a peri-urban neighbourhood to change from 30 per cent loss to follow up to less than 10 per cent loss to follow up by addressing negative experiences at the point of service that keep parents from returning to the clinic.

In this scenario, preliminary data suggests that experiences at the point of service are keeping some families from returning. The objective's variables are clear: A change from 30 per cent failing to follow up to less than 10 per cent among minority children in the peri-urban neighbourhood, and a basic description of the negative experiences obstacle. This statement is ready to use!

While you should feel at liberty to construct an objective statement in your own words, ensure that the key variables are accounted for, and that no premature diagnoses are made.

Objective formula

Our objective is for U (user group) to change from E (existing state) to I (improved state) by addressing O (biggest obstacle).

The tool below helps to separate each element of the objective formula.

Our objective is for **U** **User group (1a)**

to change from **E** **Existing state (1b)**

to **I** **Improved state (1b)**

by addressing **O** **Biggest obstacle(s)* (1c)**

*This biggest obstacle(s) are working assumptions that we will question during 'What do we think we know?' and return to during user research.

Objective formula examples:

Our objective is for **U** children under 5 of recently arrived migrants in the capital

to change from **E** 90 per cent using traditional medicine for managing diarrhea

to **I** 90 per cent seeking treatment with oral rehydration salts (ORS)

by addressing **O** caregivers' perception of ORS efficacy

Our objective is for **U** children of nomadic pastoralists in the North

to change from **E** 35 per cent completion of the childhood vaccination schedule

to **I** 80 per cent completion of the schedule

by addressing **O** the obstacles and opportunity costs of accessing services at fixed sites by families on the move

Our objective is for **U** children of an ethnolinguistic minority in a peri-urban neighbourhood

to change from **E** 30 per cent loss to follow up

to **I** less than 10 per cent loss to follow up

by addressing **O** negative experiences at the point of service that keep parents from returning to the clinic

What do we think we know?

Introduction: Critical reflection

It is likely that you have some knowledge about the programme challenge articulated in Question 1, but some types of knowledge are more valuable than other types. While general knowledge is helpful, a full accounting of the specific challenges facing the intended users of a health service are dependent on local context and thus require local investigation. Local knowledge — gathered from years of local experience, research and reflection — is of primary value.

This phase is about composing learning goals starting with what we know and what we think we know — the local knowledge that already exists among you, your team members and your programme.

Begin the process by methodically reflecting on your existing knowledge and assumptions before defining learning goals. This avoids the duplication of past efforts that did not succeed and avoids overlooking areas of exploration if their past conclusions are based on insubstantial evidence.



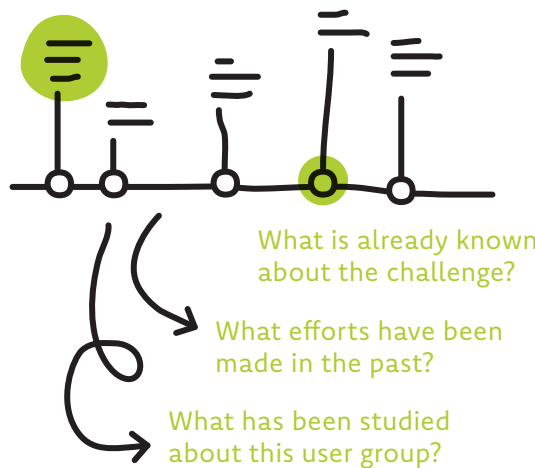
2 Methodology

To methodically account for the knowledge that already exists, and develop learning goals for research, follow this three-step process.


2a: Assemble existing knowledge

 **Time required: Hours**
Team: Pairs (subset of core team)

Gather available information about the challenge, past efforts and the individuals or communities in question. Mark key pieces of information that show what we have learned, what we should keep in mind and the relevance that this information has to the present.



2b: Recognize assumptions

 **Time required: Hours**
Team: Pairs (subset of core team)

To help avoid bias, document the possible assumptions that you and your team might carry with you.

-  **Assumption examples**
-  **Assumption catalogue**

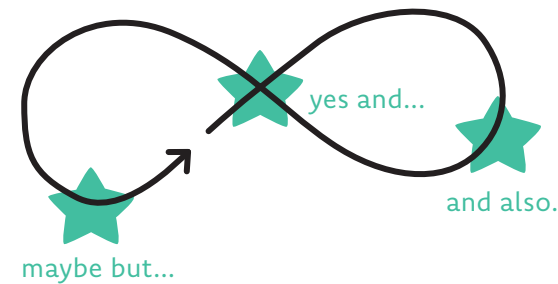


2c: Compose learning goals

 **Time required: Hours**
Team: Core team of 3-5

Using the 'caregiver journey' as a tool, clarify what you hope to get out of the research. These learning goals will help you to choose the research methods to use during Question 3.

-  **Caregiver journey**



Final output: Learning goals

Place your main learning goals on a wall or board in a shared space. Document the possible assumptions that you and your team might carry with you next to each learning goal. This will begin to form your 'field notes map.' Continue to reference throughout user research (Question 3).

-  **Field notes map**

2a Assemble existing knowledge

Assembling the available information on the current challenge can be an overwhelming task. Instead of casting too wide a net, we encourage you to collate only those pieces of information that fall into one of the three categories of existing knowledge:

- **Knowledge about the programme challenge:** For example, if the challenge is about irregular use of immunization services, or caregivers regularly accessing services late and out of step with their immunization course, it is possible that your team is already aware of the situation.
- **Knowledge about past efforts:** Maybe this is the first time your team is attempting to address this problem. If not, then it is possible to gather lessons from past efforts, such as what has worked and what has not—and, most importantly, why.
- **Knowledge about the user group:** The population in question—the users you are most concerned about—may have been previously studied. It is possible that a group outside of your own programme has already conducted formative research.

A review of the material you have assembled does not have to be exhaustive. Because examining existing knowledge can become a time-intensive task, mark key pieces of information (for example, a past effort that went very well, or terribly wrong) and spend more time with those outliers.

While the volume of material can be large, the output of an assessment does not need to be. A thorough examination should result in succinct answers to the following questions:

- In summary, what do we think we already know about the situation?
- What have we learned from any past efforts and what should we keep in mind during this one?
- What has been studied about these users, and how relevant is that information to the present?



2b Recognize assumptions we may have

Assembling and examining existing knowledge are prerequisites to what we think is the most important step: Recognizing our assumptions. **In any situation where we are asked to solve a problem, we bring along implicit and explicit assumptions—about the population we are serving and the challenges they are facing.**

This is an opportunity to discuss assumptions prior to problem-solving.

Why, exactly, is recognizing assumptions so important? Suppose an immunization programme has long been challenged by a certain population's refusal to vaccinate. This non-vaccination behaviour has led to a critical level of unimmunized children, representing a stark inequity in our district. In previous studies, this hard-to-reach group has cited religious reasons for refusal.

We are now, again, attempting to address the problem of low coverage, and existing knowledge points to a clear reason for the persistence of the problem: Negative beliefs about vaccinations.

By recording this information, we can call it into question. Maybe negative health beliefs are directly mitigating vaccination outcomes—but this may not be the whole story. Perhaps we will later discover in user research (Question 3) that a religious leader has long been advising followers to avoid vaccination; but outside the community's view, many in fact want to vaccinate their child. A finding such as that would give us a very different understanding of that population, and suggest very different solutions. The simple act of reflecting on possible assumptions we might carry can help to mitigate their influence in the future.



Assumption examples

A thorough accounting of the possible assumptions we are at risk of making will help to avoid missteps down the road. To help in the process, here is a short list of general assumptions made in the past. It is likely that you will recognize many as they

Information

Assuming that correcting misinformation with accurate information will change minds, or assuming corrective messaging will not carry the risk of unintended consequences.

In a randomized trial, interventions designed to correct misinformation about ties between autism and the measles-mumps-rubella (MMR) vaccine only served to reinforce existing beliefs. None of the interventions studied—ranging from information explaining the lack of evidence of an autism-MMR tie to information about the diseases prevented by MMR, to dramatic images and narratives about the disease—increased parental intent to vaccinate. In fact, some did the opposite.²⁵

Misconceptions

Assuming that incorrect knowledge is the reason for not engaging with services, or assuming misconceptions regulate decision-making.

In Mozambique, mothers shared various misconceptions about vaccines with researchers. However, the researchers also found that “taboos and misconceptions

span contexts and communities. While this is by no means exhaustive, we hope it is a helpful starting place when thinking about the assumptions that we and our team members might inadvertently bring to the table.

[did not] play an important role in the decision not to vaccinate.” Instead, the “overwhelming barrier” was simply distance to services.²⁶ Another group of researchers in India, after successfully using micro-incentives to increase coverage, commented that “while [study participants] might appear to believe in all kinds of things, there is not much conviction behind many of those beliefs: otherwise they would not change their minds so easily.”²⁷

Consideration

Assuming the decision to use a health service is given full consideration and made after thoughtfully weighing costs and benefits.

Reflecting on “current theories” surrounding the decision to vaccinate, one group of researchers commented that they “rest upon an assumption of caregivers who reflect upon the decision to vaccinate or not vaccinate; who calculate the benefits and costs.” However, “[i]t is not clear that caregivers actually make reflected choices concerning vaccination.”²⁸ Said another way by a researcher reflecting on his field experience: “It is my impression that in most contexts vaccinations are not thought about very much.”²⁹

Intentions

Assuming strong intentions are necessary for taking action, or assuming strong intentions outweigh small barriers.

Among subjects in a Hong Kong study that reported being likely, very likely or certain to get vaccinated against swine influenza, less than 12 per cent actually did. Strengthening intentions further would have been unlikely to nudge vaccination coverage up. Instead, as the study found, vaccination planning proved a more significant determinant of uptake than intention, such as by “suggesting where, when and how to get vaccination, improving and publicizing accessibility of vaccination centres and opening times.”³⁰

Access

Assuming that making it easier to access services translates into increased coverage. Similarly, assuming increases in access adequately explain high coverage.

In India, a programme provided free immunization camps in 60 villages. In each, a social worker educated communities about the programme, about the vaccines and identified eligible children. However, researchers found that “adequate supply of vaccines and education only increased the share of fully immunized children to 17 per cent” (up from 6 per cent).^{31, 32} In Malawi, researchers found that coverage was actually higher in some areas where caregivers walked long distances, and vice versa, suggesting that “easy access to vaccinations (short travelling and waiting time) cannot explain why the demand for childhood vaccinations in the study area is so high.”³³

Resistance

Assuming that resistance is an irrational reaction. Although people may express resistance in religious or other belief-related terms, entirely rational reasons such as previously experienced or communicated negative events are often the issue.

A review of polio eradication programming noted that in Nigeria, “memories of a disastrous meningitis vaccine test which killed several thousands is still current; in India, the association between a government with a history of sterilization campaigning, and Auxiliary Nurse-Widwives who are used both to deliver polio vaccine and to ‘advise’ parents in favour of family planning (under a minimum monthly quota), can be traced to the ‘myth’ of oral polio vaccine and infertility.”³⁴

25 Nyhan, et al. (2014), ‘Effective Messages in Vaccine Promotion: A randomized trial’.

26 Sheldon and Alons (2003), ‘A study to describe barriers to childhood vaccination in Mozambique’.

27 Banerjee, et al. (2010), *Improving Immunisation Coverage in Rural India: Clustered randomised controlled evaluation of immunisation campaigns with and without incentives*.

28 Holte, et al. (2012), *The decision to vaccinate a child: An economic perspective from southern Malawi*.

29 Nichter (1995), ‘Vaccinations in the Third World: A consideration of community demand’.

30 Liao (2011), ‘Factors Affecting Intention to Receive and Self-Reported Receipt of 2009 Pandemic (H1N1) Vaccine in Hong Kong: A longitudinal study’.

31 As quoted in Cappelen, et al. (2010), ‘Demand for Childhood Vaccination: Insights from behavioural economics’, referencing Banerjee, et al. (2010), *Improving Immunisation Coverage in Rural India: Clustered randomised controlled evaluation of immunisation campaigns with and without incentives*.

32 A concurrent incentive programme doubled that coverage figure, by comparison.

33 Holte, et al. (2012), *The decision to vaccinate a child: An economic perspective from southern Malawi*.

34 UNICEF, ‘Social Mobilisation and Communication for Polio Eradication: Documentation in Nigeria, India and Pakistan (2002-2003)’.

Questioning assumptions

Assuming public beliefs are also private beliefs

Health programmes are sometimes challenged by the health beliefs of the populations they are trying to reach. It is often assumed that programmes must campaign to shift those beliefs as a prerequisite to the programme's success. However, beliefs are often intractable in the individual and reinforced by community norms; they are not easy to change.

A programme in Zambia in 1999 was faced with "hard to reach and hard to convince" populations.³⁵ Among these groups were members of the Apostolic Church in Zambia. The church's doctrine explicitly rejected all 'Western' medicine. This was a belief that the community affirmed; publicly, all members adhered to it.

However, by questioning the assumption that this public declaration was universally true, researchers discovered that privately, many people did want to participate in the vaccination programme—but they were worried about the reactions of their fellow members.³⁶ Researchers devised an elegant solution: Health workers

stayed late in the area so members could come for immunization when fewer people would be there to see them.

This group, which publicly denied the value of vaccination, ended up vaccinating almost all of their children. Without this additional observation, the programme may have assumed the need to change this publicly articulated negative health belief. **By putting all assumptions on the table, programmes open themselves up to interventions that are more responsive to the challenges users face.**

The 'assumption catalogue'

Using the 'assumption examples' on pages 52-53 as a guide, document existing assumptions about the challenge, past efforts and the intended user group.

Do we sometimes assume that providing more information to this user group is usually better? That making sure they value the health service is necessary? Take a moment to consider the possible assumptions that you and your team might carry with you. This should be no more than a quick reflection exercise.

³⁵ *Communication for Immunization and Polio Eradication in Zambia: A joint case study by CBOH, MOH, UNICEF, WHO/AFRO and USAID (1999).*

³⁶ This phenomenon is known as 'pluralistic ignorance', where a majority of group members privately reject a social norm while incorrectly assuming that most others accept it. See: Miller and McFarland (1991), 'When Social Comparison Goes Awry: The case of pluralistic ignorance'.

Assumption catalogue

Start with the 'common obstacles' identified on page 41 and used in the 'objective statement'. Do we really know for certain that this is what stands in our way?

Consider assumptions of misinformation, access, consideration, resistance, intentions and misconceptions from the 'assumption examples' on pages 52-53.

What assumptions exist about the culture, barriers and beliefs of health workers?

What assumptions exist about the culture, barriers and beliefs of caregivers?



2c Compose learning goals

The gap between the change we are supporting in the community (the ‘objective statement’) and what we know and think we know from past research (assumptions) leaves us with what we still need to figure out. These questions that need additional research become our learning goals.

Do we know how decisions are made? Do we know everything about the prioritized user group’s motivations, perceptions and trade-offs? Do we know about how they are influenced by and interact with their family, community, health system and political system? Do we know whom and what they trust? Do we know about gender dynamics, community outreach mechanisms and channels with the community?

Using the ‘caregiver journey’ model on this page, think about the areas that need the most attention. What do we need to learn about each stage?

Reference the ‘assumption catalogue’ from page 55 to further investigate the questions that need to be answered.

While the model follows a caregiver’s journey, consider the journey of the health care provider as well. Both work in equal parts toward the goal of protecting and serving every child. What must the health care provider know and prepare? What costs and efforts must they make to be present both physically and mentally?

Stages in the caregiver journey

1. Knowledge and awareness

This encompasses awareness of the health service, its purpose and when/where/how to receive it.

2. Intent

This stage focuses on overcoming the gap between intention and behaviour. Caregiver readiness to receive a health service is determined by three things; their attitude towards the specific behaviour, their subjective norms and their perceived behavioural control.

3. Preparation

Preparing for the visit includes consideration of the service, planning the logistics of accessing services, finding transportation, arranging child care and mitigating opportunity costs.

4. Cost and effort

Cost is not only financial—there is effort to find the time and make the required trade-offs to travel to the point of service. Opportunity, transport, lost income, uncertainty of service and social and security costs are all part of this step.

5. Point of service

This includes all aspects of the experience, including client satisfaction, wait times, interpersonal communication with health workers, missed opportunities and the physical environment. It is also important to remember the health workers’ experience, and how that affects their perceptions and performance.

6. After service

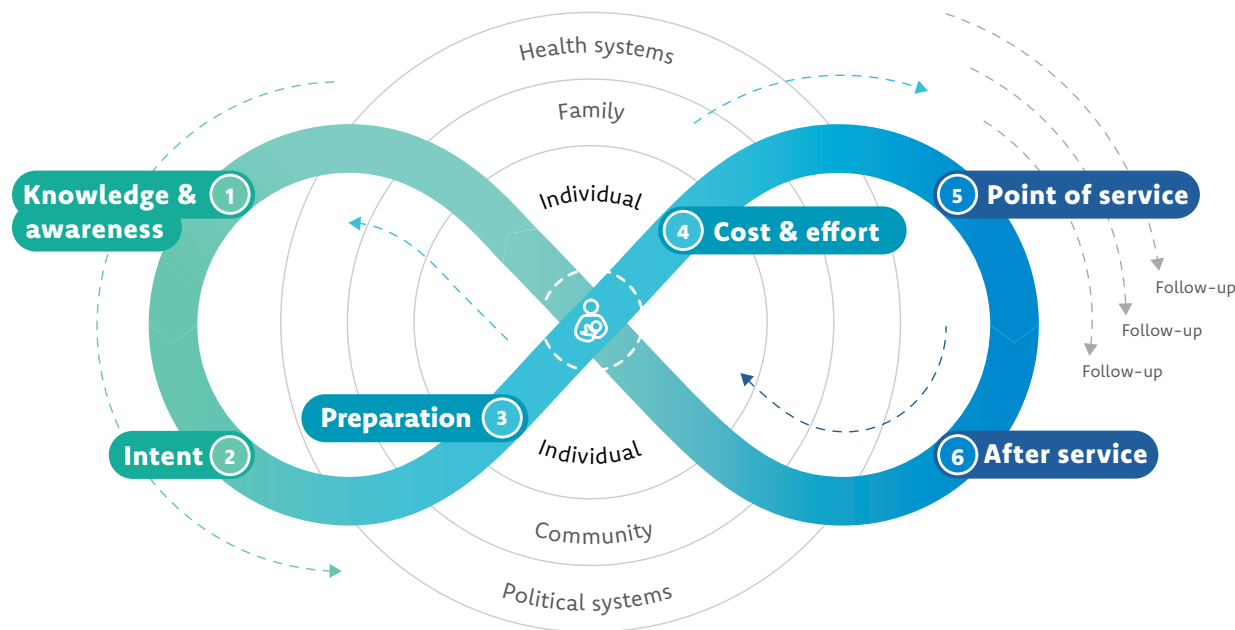
Short-term factors include immediate feedback, understanding the next steps and getting home from the clinic.

Long-term factors include side effects, cues to action, reminders, social reinforcement (what they tell their friends) and accepting the health service as a social norm.

Surrounding socio-ecological environment

These interwoven levels of influence help us understand the context of individual decision-making and action-taking. Consider subjective/social norms, trust, confidence, social values, community-level political structures, gender dynamics within families, inclusive and adaptive health policies, health systems, community outreach mechanisms and communication channels with the community.

Caregiver journey



Field notes map

During research, each step will yield distinct outputs—these outputs are your field notes. The field notes map is designed to give you a place to capture them.

Set aside a part of your workspace—space behind your computer screen, an open wall or the back of a used poster—to track your team’s progress and findings in a shared space. The matrix to the right demonstrates how this might look using tape and sticky notes.

Each row represents a distinct ‘learning goal’ from page 56 paired with any ‘assumptions’ we must prove or disprove. At the end of the user research process, you will have a final wall of completed field notes that synthesize your findings. During Question 4, we will use these field notes to generate solutions to the challenges that they describe.



Field notes icon

This icon indicates where you should pause and add your final sticky notes to the designated field notes area.

2c

Learning goal:

What do we not know?

Research questions that will be investigated during user research.

2b

Assumptions:

What do we think we know?

Acknowledgment of any assumptions we might be making or biases we might have.

3b

Themes:

What is really happening?

Recurring information from observations and interviews that relates to user behaviour.

3b

Diagnosis:

Why is it happening?

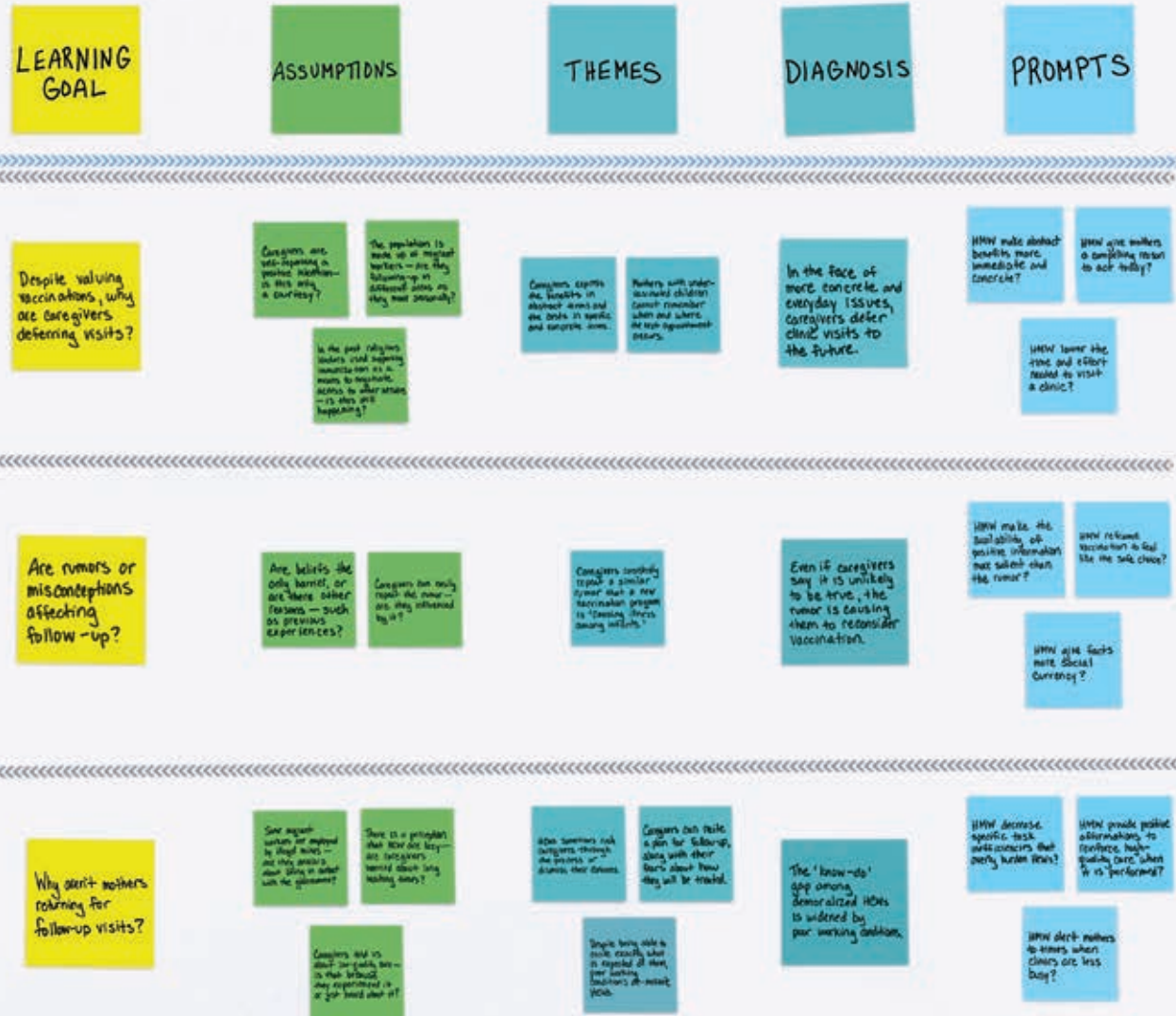
Hypothesis of why we are seeing what we are seeing or hearing what we are hearing.

3c

Prompts:

What does this imply for us?

Redefine challenges as opportunities to prepare for generating solutions.



What stands in our way?

Introduction: User research

This is the question that will require the most amount of time and energy. This phase introduces human-centred approaches to investigating the challenges facing intended users of your programmes. What prevents the prioritized user group from fully engaging with an immunization programme? This phase uncovers the variables that stand in the way of success and prepares teams to generate smart solutions.

While this may be the most intensive part of this field guide, we are guessing that it still stands in contrast to many other resource-intensive approaches to research. Rather than suggest multi-year longitudinal studies, or time (and resource) heavy cross-sectional analyses, this guide introduces the processes and techniques of rapid inquiry.

What this phase requires is your steadfast focus, not unwieldy budgets. Basic resources, deliberate attention and an energetic team are all you need to begin.



Working with people

People are complex and riddled with paradoxes. We respond to well-planned programmes in unpredictable ways and give answers to surveys that contradict our real-world behaviour.

The principal challenge of this phase is that people designing health programmes are usually not the same people that use them. We are asked to design solutions to problems we have not confronted personally. **There is a gap between our experience and the experience of the people using the programmes, which is called an empathy gap.**

Each user research method works to close that gap. The more we can empathize with the lives and lived environments of the people we intend to serve, the more effective our programmes will be. Activities grounded in dialogue and listening give us divergent perspectives on problems and new inspiration for solutions. **This is a methodical approach, based on immersive research exercises, to investigate, understand and diagnose root causes.**

This phase will yield a set of insights that help to clarify what prevents users from fully utilizing the health service in question. These insights will allow us to propose and test new solutions.



Augmentation, not replacement

Many readers of this field guide are well versed in research: The process of understanding and diagnosing what is going on in communities and why. We do not intend to wholly replace the established methodologies your team has for researching challenges.

Instead, what follows is an opportunity for augmentation: A way of better understanding intended users, and integrating those approaches into your investigative work. It is our hope that pieces of this approach and the principles that guide it will support existing research methods.




3 Methodology

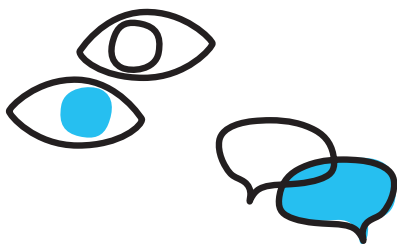
Each part of this process is tightly linked and iterative. Rather than only progressing forward, it is likely (and encouraged) that you will return to earlier steps for further clarification and investigation as needed.

3a: Explore the user's environment

 **Time required: Days**
Team: Core team of 3-5

Gain a detailed understanding of the challenges preventing better immunization outcomes. Better understand user conditions and experiences to ensure that you address the right problems.



-  [Research plan template](#)
-  [Discussion guide template](#)
-  [Record field research](#)

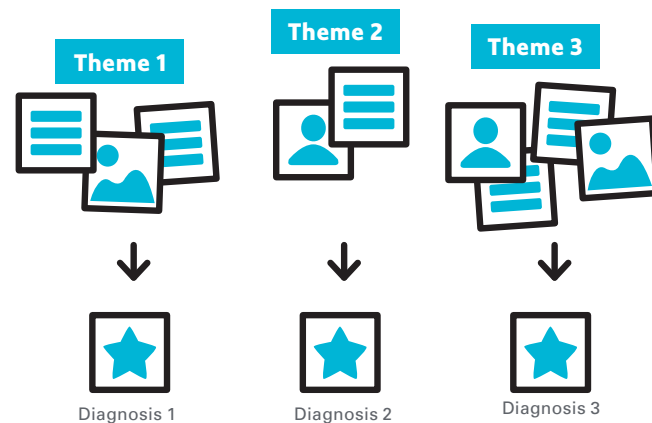


3b: Interpret collected stories


 **Time required: Hours**
Team: Core team of 3-5

Share information from the field through user stories. Analyse themes within user stories to hypothesize why this is happening. Develop diagnoses to explain what the team saw and heard, returning to the field to gather more information as needed.




-  [Diagnostic worksheet](#)
-  [Theme examples](#)



3c: Propose opportunities for design

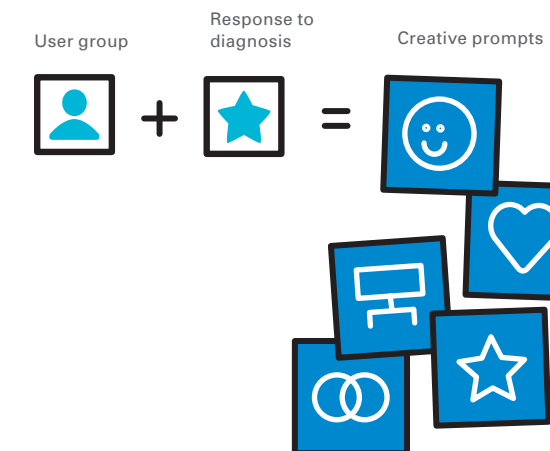
 **Time required: Hours**
Team: Core team of 3-5

Transform our diagnoses into actionable tools. Personas help teams understand the prioritized user group's thoughts, feelings and actions. Finally, prompts translate the technical diagnosis into a simple question that points to solutions.

-  [Persona profile](#)
-  [Relationship map](#)
-  [Prompt formula](#)

Final output: Creative prompts

This phase concludes with 'how might we' (HMW) statements that respond to the challenges witnessed in the field. These prompts are focused enough to inspire specific concepts, but broad enough to not dictate a solution.



3a Explore the user's environment

Begin exploring broadly by gathering as much information from the field as possible. This is about engaging in open-ended inquiry — familiarizing ourselves with an environment, the people in it and the challenges that it presents.

This methodology uses human-centred activities that help us develop an intimate familiarity with users and the contexts that influence them. These activities are loosely split between recording *what we see* happening in the field and *what people say*. Respectively, these are observations we make and interviews we conduct. The *observational* and *narrative* data we gather will serve as the raw material used to analyse the challenges facing intended users of our programmes.

i. Research methods

This section includes observational activities and techniques for collecting and analysing data. We will use two types of qualitative research methods: Observational techniques and interview techniques.



ii: Develop a research plan

Plan how you will go into the field and talk to people. Choose which activities, including both observations (what we see) and interviews (what people say), to use. Build a discussion guide for interviews.



iii: Conduct field research

Observe intended users within the environments that shape their day-to-day lives and behaviours. Interview intended users and allow them to speak about specific events and experiences.

iv: Record field research

After each day of field research, quickly synthesize and record the information you have gathered. Document what is seen, heard, felt and said. Record as much as possible—even the seemingly mundane.

i Research methods: Observations

Observations allow us to be open-ended. Instead of the closed, static list of questions that comprise surveys, observing people and their environment allows for the unknown to be revealed and encourages deeper understanding.

Go beyond self-reporting

The things that people say and what people actually do are often not the same. Having a body of observational research can ensure that we are checking against this 'say-do' gap.

For example, perhaps we noted in our assumptions from Question 2 that previous KAP surveys have consistently found respondent claims of seeking out clinics but finding them closed during usual business hours. Observational research could affirm or refute this self-reported claim. Spending time at clinics and with community members provides the opportunity to see rather than only rely on what we have been told.

Unearth the details

Observational research can provide a more complete assessment of challenges. Intended users rarely identify exact problems and solutions. However, observing people's behaviours and how those behaviours are shaped by their environments can provide additional clues.

For example, we might know that users report "poor interactions with HCWs" as a reason for not returning to the clinic. But what exactly about these interactions is negative? Interviews might be helpful; but again, interviews are still subject to self-reporting challenges.

They might reveal that HCWs are seen as rude. But rude how, and why?

Spending time observing these interactions will uncover more details. We might learn the typical clinic environment in a district is chaotic and overburdened; the problem lies with the clinic environment rather than with the care providers. Observational details about unorganized intake systems, long wait times and inefficiently tiered tasking between HCWs and physicians could give us a richer understanding as to why users cite "poor interactions" as a reason for not returning.

Learn from outliers

Finally, observational activities can help to elucidate phenomena that quantitative data cannot—such as learning from the extremes rather than only from the statistical average. Whereas quantitative research tends to focus on patterns and aggregates, observational research can draw out equally important insights from outliers. For example, a survey might reveal that only a small group within a large community initiates immunization courses. Observational research can help us to go beyond the averages. Spending quality time observing and speaking with this outlier group could point us in the direction of what works based on what they are doing differently.

The following examples show how observational techniques aid in better understanding users and their contexts:

Timing activities

How long does it take someone to complete a particular task?

Suppose we are researching the day-to-day work of HCWs at district clinics, investigating the ways that their work is being made unnecessarily difficult. What might we learn from timing how long it takes them to perform certain tasks? By gathering a small sample of figures and comparing them across clinics, we could pinpoint tasks that consume a disproportionate amount of their day. We might learn that data-entry is absorbing most of their time, encroaching on the time they could devote to patients. This might give us specific information to support HCWs, rather than general information to increase performance.

Diagramming movements

How are people interacting with each other in a particular situation?

Suppose we are interested in learning more about how new mothers experience health services in a neonatal setting. Vaccinations are only one aspect of care, and we are concerned with how immunization fits into a new mother's broader clinical experience. Throughout their visit, how does she move throughout the space, from entering to

exiting? With whom does she interact at different moments? Observation here takes the form of diagramming people's movements and interactions. Perhaps we find that mothers spend most of their time waiting; and the time spent engaged with care providers is quick and intense. Vaccination-related conversations get buried easily, despite there being ample downtime during which immunization education and instruction could be delivered to mothers.

Identifying patterns

How many caregivers perform an activity one way versus another?

Suppose we are looking into home-based records, investigating what happens outside the clinic. While interviewing caregivers during at-home visits, we notice that some keep their records concealed in a box, some keep them out in the open and some do not immediately know where they are. Throughout interviews, simply tallying each record-keeping observation into one of these categories could quickly reveal either a dominant behaviour shared by the community, or a preference that varies from home to home. Perhaps a majority know exactly where their child's health card is; but because they keep it out of sight (the dedicated box), it is also out of mind.

i Research methods: Observations

Collect information from the field about what may be impeding or facilitating immunization outcomes among your user group(s). Plan observations for multiple environments and balance passive observation with experiencing users' lives directly. Try to refrain from judgement based on your own experience. The point of this research is to understand the experience of the user.

Peer-to-peer observation

Involve users directly to collect inputs. For example, equip HCWs with daily journals to document what they observe and find important throughout the day.



Home visits

Develop deeper relationships with a select user or group of users through an immersive experience, such as a full day at their home.



Non-participant observation

Remove yourself from direct observation and use less intrusive mechanisms to gather material, such as setting up a camera or audio recording in a clinic waiting room.



Artifact collection

Examine materials, such as home-based records or clinic education materials.



First-hand experience

Experience an event as the user yourself. Move through a clinic as though you are a patient. Work alongside a mother or HCWs for a day. Accompany a caregiver on a clinic visit.



i Research methods: Interviews

Incorporating listening tools into our field research invites users to tell their stories. Open-ended questions, in particular, unearth important information. Here are some ways that open-ended questions produce new insights.

Interviews provide us with specific events, not generalized statements.

For example, rather than just learning that users are too busy to get a vaccination, we might learn that a user is indeed busy; and that as a new mother, she feels overwhelmed with new responsibilities. While she intends to get her baby vaccinated, she is struggling right now to focus on properly feeding and clothing him. She sees these essentials as taking priority. Once they are taken care of, and she feels like she has more time, she will get to the clinic.

This richer story goes beyond a generalized statement, and gives us more to analyse: there is a gap between intention and action. The emotional stress of being a new mother is causing her to defer taking action, and there may be perceived or real opportunity costs to seeking out vaccinations such as less time to focus on survival essentials like clothing and food. **It will be much easier to brainstorm solutions for these detailed facets of her story than to a generalized and abstract problem such as being too busy.**

Interviews establish empathy with users and mitigate judgement.

Despite our best intentions, it is hard to reserve judgement—even subconsciously. When learning about suboptimal decisions made by others, we may imagine that we would have made a better decision. First-person narratives (stories) help to mitigate that tendency by inviting empathy. When we learn what it feels like to be a new mother in a particular context—the pressing details of her day, the mercurial emotions of motherhood—it is easier for us to engage in the imaginative exercise of putting ourselves in her shoes.

Empathy helps us to design solutions for others, not for ourselves. Solutions influenced by what we would have done in that situation will be different (and less effective) than solutions influenced by a visceral understanding of the capacities and constraints facing the intended users of our programmes. Whereas judgement separates us from others' lived experiences, empathy helps us to appreciate them.

Interviews improve knowledge transmission to our teams.

It is easier for our brains to remember stories than numbers. **Narratives are more easily recalled, and so can be more easily transmitted to others—and, in turn, more easily acted upon.** Imagine a bar graph with “reasons for non-vaccination” listed across the x-axis: Too busy, rude health workers and fear of side effects. Compare that image to a storyboard of events as recalled by a mother: How she planned to go to the clinic that day; how she was asked to watch over her neighbour's children instead; how she might have dragged

them along, but felt overwhelmed when she imagined the chaotic waiting room of the clinic. This is not to say the bar graph is unnecessary; but it is not enough.

When it comes time to think about solutions to the challenges faced by this mother, in an effort to get her child vaccinated, the storyboard will help transmit empathic knowledge to your team more than numbers alone. Narratives put what we learn in context—they give meaning to otherwise abstracted information and they help our teams make sense of what we see in the field.

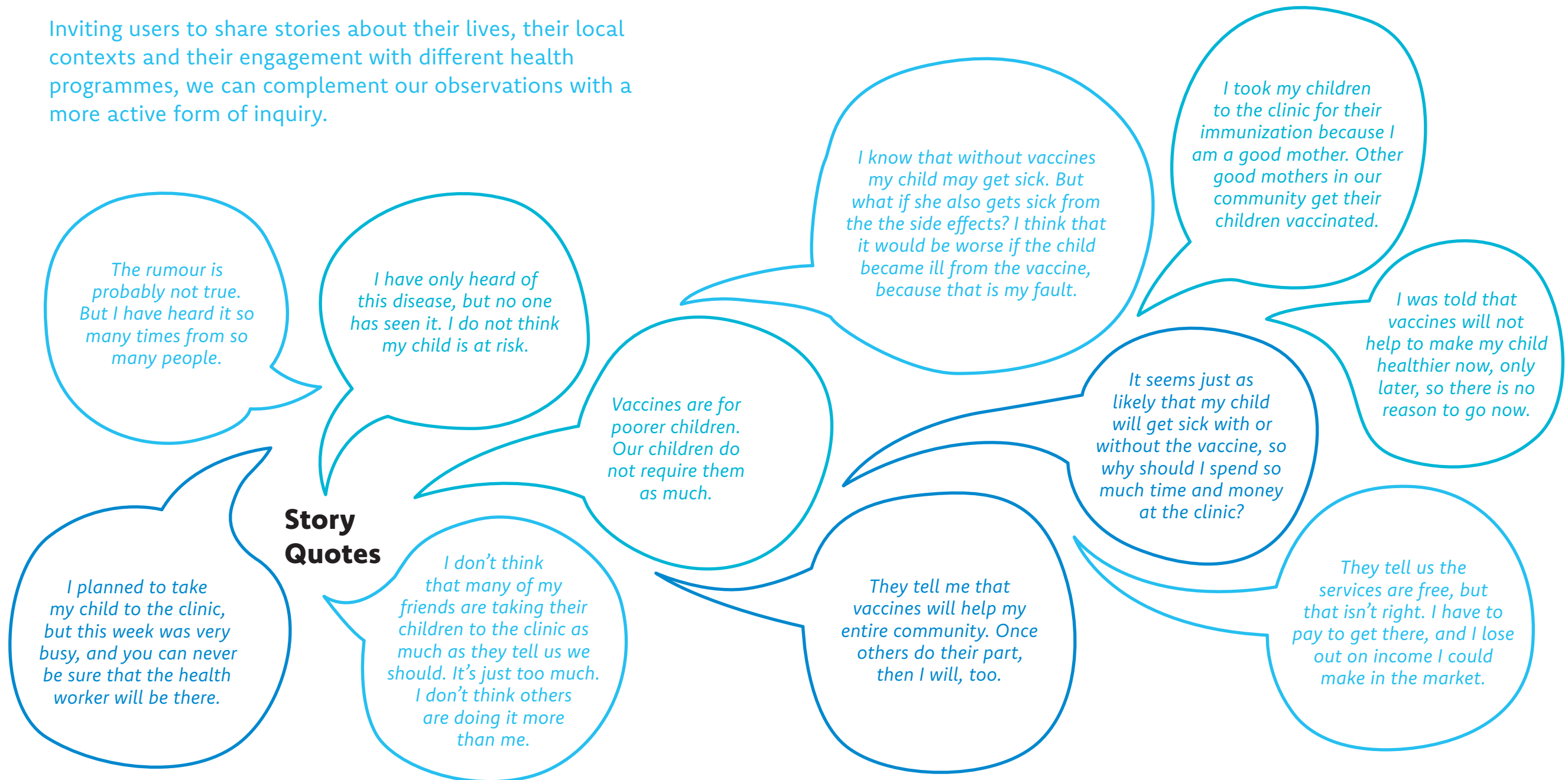
Combining observations and interviews

Finally, there is an important caveat to interviewing. While gathering stories is important, this does not mean that we should take all stories at face value. What people believe and say is not always

what they do. **Repeated observation of people in context can help us to juxtapose stories to what we see with our own eyes—which is why comparing what we observe to the stories we hear can be critical. Our next step (3b: Interpret collected stories) will help us determine what is really happening.**

i Research methods: Interviews

Inviting users to share stories about their lives, their local contexts and their engagement with different health programmes, we can complement our observations with a more active form of inquiry.



i Research methods: Interviews

Interviewing should almost always be part of the research plan. Interviews collect what people—caregivers, HCWs, community leaders, families and communities—think and feel, in their own words. Whenever possible, conduct interviews in the home of the family, or a location where the health service is offered.



Informal interviews

This style of interview is helpful to familiarize oneself with the environment and build rapport with users. These conversations can be conducted as an exploratory prerequisite to structured interviews.

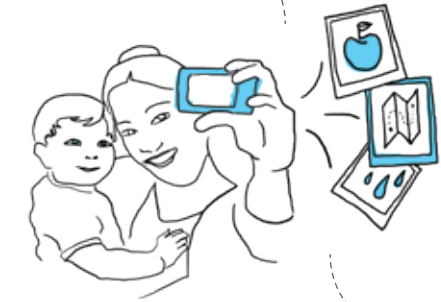
Show and tell

User-guided tours allow users to show their environment and share their experiences within them. For example, a HCW might walk you through a clinic. Combining a guided tour with informal interviews can prompt users to share stories when cued by their context.



Photo documentation

This method allows users to self-select what they find important. Give them a basic camera and loose instructions (example: take pictures of what makes him/her think of 'health') to gain an intimate perspective—and draw out more stories.



Card sorting

This method can be used as an activity within an interview. It provides a hands-on way to engage users and allows them to share their perspective through non-verbal means. By using simple pictures or illustrations on index cards, users can sort processes they experience or desire (a sequence of events) or rank preferences (their priorities for the week).*

For more on card sorting methods, see *The Field Guide to Human-Centred Design* by Ideo.org.



Structured interviews

These are scheduled and deliberate conversations. Use the 'discussion guide' to ensure you are probing the most important topics consistently in each interview. This will provide parallel points of comparison during 'interpret collected stories' (3b).



i Research methods: Knowledge, attitudes and practices

Challenges to interpreting quantitative data

KAP (knowledge, attitude and practice) surveys are an attractive approach to investigating health-related behaviours for a number of understandable reasons: The data are quantifiable and thus perceptively rigorous; findings can be generalized to a larger population beyond those surveyed; and the methods for execution are well known and so more easily implemented.

However, despite the comfort of obtaining hard numbers, KAP surveys face considerable limitations, especially when it comes to obtaining nuanced understanding of behaviours and the environments that shape them. This page presents common challenges to interpreting quantitative data.

Knowledge and behaviour

An emphasis on assessing knowledge can falsely presuppose a direct relationship between knowledge and behaviour.³⁷ For example, a KAP survey finding that respondents generally have a low level of knowledge regarding the link between certain symptoms and a disease might presuppose that this has a direct influence on health-seeking behaviour—that insufficient knowledge will impair desirable outcomes. However, this may not be the case; the relationship between knowledge and behaviour is often counterintuitive and indirect.

Measuring attitudes

Here are some ways that survey responses may fail to accurately measure attitudes:³⁸

- 1) People tend to provide answers that they think are correct or that they think the researcher wants to hear, regardless of their true attitudes.
- 2) When people have no opinion they may feel compelled to invent one.
- 3) Social norms may lead respondents to modify responses in order to appear acceptable.
- 4) Respondents tend to change their responses to make contradictions appear consistent.

We need to consider these constraints before assuming that quantitative data can accurately measure attitudes.

Past practices

Asking respondents to report past events, such as decisions they made or thoughts they had in previous situations, can assume an outsized ability among people to accurately recall information.³⁹ For example, when asking a respondent about the symptoms experienced during an illness and the subsequent health-seeking

“The most important aspects of a situation are not necessarily those which can be readily quantified... However, quite often the appeal of quantification derives from the unfounded belief that the process of quantification itself can promise or ensure precision, intelligibility, reliability and concreteness. Of course, it does nothing of the sort; quantification often involves a large measure of abstraction.”

Bauer, P. T. (1972), *Dissent on Development: Studies and debates in development economics*

behaviour demonstrated, the responses provided will likely be impaired by imperfect informant accuracy.⁴⁰ An over-reliance on memory of past practices can lead to compromised retrospective data.

Descriptive data

Perhaps most critically, KAP surveys—as with most survey instruments—can be helpful in assessing people’s general understanding of local practices, but are much less capable of teasing out the logic behind respondents’ behaviours.⁴¹ In other words, KAP surveys can give us lots of descriptive data, but are less capable of providing explanatory data. The implicit risk here is the use of KAP surveys to determine the reasons behind behaviours, rather than acknowledge the limitations of such survey instruments.

Stated versus actual

Surveys may reveal misalignment between statements and facts. In one example, a researcher recorded positive attitudes towards an antenatal clinic’s services through a KAP survey, and then vocal criticism of that same clinic during in-depth interviews.⁴² This illustration is an example of courtesy bias, where respondents produce answers that they think the researchers want to hear. Other issues, such as the difficulty of obtaining veracious opinions on sensitive topics, can also skew findings.⁴³ Awareness of potential misalignments will help to interpret survey findings more accurately.

37 Yoder (1997), ‘Negotiating Relevance: Belief, knowledge, and practice in international health projects’.

38 Podsakoff, et al. (2003), ‘Common Method Biases in Behavioural Research: A critical review of the literature and recommended remedies.’

39 Hassan (2005), ‘Recall Bias can be a Threat to Retrospective and Prospective Research Designs’.

40 Bernard et al (1984), ‘The Problem of Informant Accuracy: The validity of retrospective data’.

41 Pelto and Pelto (1997), ‘Studying knowledge, culture, and behaviour in applied medical anthropology’.

42 Launiala (2009), ‘How much can a KAP survey tell us about people’s knowledge, attitudes and practices? Some observations from medical anthropology research on malaria in pregnancy in Malawi’.

43 Podsakoff, et al. (2003), ‘Common Method Biases in Behavioural Research: A critical review of the literature and recommended remedies.’

ii Develop a research plan

Observations

Where to use

Choose a place where you can have an experience that is relevant to your challenge. Clinics, homes, transportation to and from health centres, community centres and trusted religious or spiritual centres are all potential places for observation. Think about the daily journey of your user—what places do they pass or stop at along the way?

How to use

Choose which activities will help you learn:

- Observing mothers and families, experts or clinics
- Shadowing mothers, caregivers, HCWs or community health workers (CHWs)
- Co-create with the community, learning from peer-to-peer observation

Interviews

Where to use

Choose a place that is comfortable and convenient for the interviewee. This may be their home, a clinic or a secluded location where they feel at ease speaking truthfully.

How to use

- Describe the people you want to meet: How are these people distinct? Who else in their life can you learn from?

- Select research participants: Talk with your team, colleagues and partners to help locate and contact the types of people you want to speak with. Send an email describing what you are looking for, post in a common area or reach out to a community leader for help.
- Develop a discussion guide but allow for spontaneity (see page 82).
- Include interactive activities for interviewees who may be reluctant to share openly in response to open-ended questions.

How many?

The difficult question for research is: How much is enough? We are not trying (at least immediately) to find a representative group whose behaviours can reliably be generalized to the entire population. **We are trying to solve for a distinct group within a population**—the prioritized user group—so the number we start with will be small. We cannot give you an exact number of interviews or observations, but we can give some guidelines:

- Talk to more than one subgroup and visit more than one location.
- Visit enough locations or speak to enough people that you start to recognize patterns—if you only see or hear it once, it is anecdotal.
- There is no magical number, but talking to seven people is **a good rule to have a diversity of perspectives, but also be able to draw commonalities.**

Research plan template

Plan your interviews

Prioritized users

① _____

② _____

③ _____

Adjacent users type A

④ _____

⑤ _____

Adjacent users type B

⑥ _____

⑦ _____

Plan your observations

In the home / community
shadowing, peer-to-peer, first-hand experience

① _____

② _____

③ _____

At a care facility
shadowing, peer-to-peer, first-hand experience

④ _____

⑤ _____

At a religious/influential location
shadowing, peer-to-peer, first-hand experience

⑥ _____

⑦ _____

ii Develop a research plan: Discussion guide

Having a good conversation with a stranger is not always easy. You have to help the person feel comfortable and build trust while collecting relevant information. To manage this delicate balance, prepare a discussion guide to serve as an outline for your conversation — a checklist to ensure you have covered everything.

The exact order of the questions may change to accommodate the natural flow of each conversation. All questions in the guide should be followed up with probing questions such as “Why?” or “How?” or “In what way?”

Identify topics

Use your ‘learning goals’ from 2c as a starting point. Then, as a team, brainstorm what you want to learn about in your conversations with research participants.

- What do you need to learn about your challenge?
- What are you hoping to understand about people’s motivations and frustrations?
- What do you want to learn about their activities? Networks? Habits? Beliefs?

Write questions

Write questions that are broad enough to encompass the experience from many perspectives. Frame them as open-ended questions (avoid questions with a “yes” or “no” answer) that invite detailed narrative, such as:

- Tell me about a time when...
- What are the best/worst parts about...?
- Can you help me understand more about...?

- Take me through a typical day...
- Where do you get your information on...?
- What work-arounds have you found for...?

Include interactive activities

Activities are fun, interactive and can help uncover the behavioural information you are looking for when interviewees are reluctant to share openly. Consider asking:

- Can you show me how you...?
- Send or show me three pictures of when you feel (x)...
- Sort these cards in order of importance to (x)...
- Think aloud as you perform (x) process or task.

Organize the order

- **Introduce yourself:** Explain what you are doing and reassure participants that you are not here to judge.
- **Start specific:** Begin with questions your participants are comfortable answering.
- **Try an activity:** Activities are a great warm-up, so if they are part of your plan, put them towards the beginning.
- **Go broad:** Ask more profound questions about hopes, fears and objectives.
- **Concentrate on the interest areas:** Explore your challenge, or any interesting theme you noticed during the conversation, in more depth.
- **Close the conversation:** Always thank the interviewee for his or her contribution.

Discussion guide template

Introduce yourself

- 1 Hello, my name is... and I work with....
- 2 I’m conducting interviews because...
- 3 What you say is confidential, we will never attribute your name to...

Start specific

Tell me a bit about yourself. Where do you live? Where are you from? What do you do?

- 1
- 2
- 3
- 4

Try an activity

Can you show me how you...? Send or show me three pictures of when you feel (x)... Sort these cards in order of importance to (x)... Think aloud as you perform (x) process or task.

Go broad

Tell me about a time when... What are the best/worst parts about...? Can you help me understand more about...? Take me through a typical day... Where do you get your information on...? What work-arounds have you found for...?

Concentrate on the interest areas:

Express gratitude!

iii Conduct field research

Conducting research requires that we leave our world behind and become sponge-like inside the environment, home, community or health centre of our user. This acclimation requires a few general preparations:

- Make sure you are not interested in a particular outcome before you start. If we know what we want to see or hear, we can convince ourselves that we saw or heard it. Write down everything to make sure you are not filtering what you feel is important in the moment. If you think you have an agenda or expected outcome, notate it in your final field recordings so your team can look out for the bias during share back.
- Consider the diversity of your participants. Are you speaking with both men and women? Old people and young people? Community leaders and customs followers? Subtle or invisible root causes arise from the different expectations, challenges, and socially conditioned roles within a community. Make sure these differences are accounted for in your selection of participants.
- Have your team meet somewhere that is not where you will interview or observe users. This ensures you are prepared, gives you time to review the most important questions you have left to answer and transitions you into a research-ready mindset.
- We want participants to be open and honest about their lives, which is not always customary or comfortable. Make sure you are aware of the social expectations

and customs in the region where you are conducting research. When you choose who will ask the questions, it should be the person that will create trust and ease within the conversation. This is usually someone locally familiar, but may be an outsider who will not share what participants say back to the community.

Ethical considerations for an inclusive process

Be sure to follow all local policies regarding human subjects and informed consent before starting field research. When you are selecting and recruiting research participants, communicate and follow these guidelines to avoid unintentionally violating tradition, custom and privacy.

- **Voluntary participation** requires that people not be coerced into participating in research.
- **Informed consent** requires that participants be informed about what activities will take place and how their responses will be used in order to give their informed consent to participate.
- **Do no harm** means that participants must not be put in a situation where they might be at risk of harm as a result of their participation (physical and psychological).
- **Respect confidentiality** requires that all identifying information that has been promised to be confidential will be shared only with the core team and will be unlinked from information that could identify the participant.



Exploring and observing

- Explore and try to blend in with everyone else during your observation.
- Find a spot that is out of the way.
- Take notes and photos (ask permission where appropriate).
- Capture interesting quotes (and the context in which you hear them).
- Draw sketches, plans and layouts (patient or HCW/community health worker journeys).
- Look for interactions between people, objects and instructions.
- Map key experiences and how they are created.
- Collect objects that support activities, experiences and interactions.



Conducting interviews

- Interview in pairs (alone can be hard, but the entire team can be intimidating).
- Assign roles: One person leads the conversation and reads the participants' body language/facial expressions, the other takes careful notes (get word-for-word quotes where possible).
- If possible, take photographs and record a summarized statement from the interviewee at the end. Remember to ask permission first.
- Hold the interview in a place with minimal distractions or interruptions.
- Allow interviewees to share incorrect answers, it does not matter who is right, it matters what they believe.
- Do not make the interview about you—even if you identify with stories the interviewee is sharing. Build rapport without dominating the conversation. Any judgement, including positive or negative reinforcement, can influence responses.

iv Record field research: Observations

After each day of field research, quickly synthesize and record the information you have gathered—what you observed people seeing, doing and saying. This serves two key purposes: Important details are not forgotten and guidance is set for what still must be uncovered during subsequent research.

Describe setting

| | |
|---|--|
| <p>5 Observations</p> <p>What are people doing in this situation? How are people doing this? Why might they be doing it this way?</p> <p>① _____</p> <p>② _____</p> <p>③ _____</p> <p>④ _____</p> <p>⑤ _____</p> | <p>3 Things that were new or surprising:</p> <p>① _____</p> <p>② _____</p> <p>③ _____</p> |
| <p>4 Moments that stood out:</p> <p>① _____</p> <p>② _____</p> <p>③ _____</p> <p>④ _____</p> | <p>2 Things that felt familiar:</p> <p>① _____</p> <p>② _____</p> |
| <p>1 Way we could help our prioritized user group:</p> <p>_____</p> | |

iv Record field research: Interviews

After each interview, quickly synthesize and record the information you have gathered as an empathy map—what the interviewee is thinking, feeling, seeing, doing and saying. This serves two key purposes: It forces you to see the situation from their perspective and ensures you are asking revealing questions.

Seeing

Describe setting:



3b

Interpret collected stories

Our next task is to *make sense* of what we saw during our observations and what we heard in the stories we collected — in other words, to interpret our field research. If seeing and listening are about using a judgement-free lens to take stock of environments and the ways in which users behave within them, interpretation is about critically analysing what we gathered.

The purpose of interpreting is to move from seeing *what exists* to establishing *what this means*. This process will lead us to articulate diagnoses that capture the underlying challenges facing users and what is standing in the way of our programme objective.

There are three steps to interpreting the information we gathered from the field:

i: Share user stories

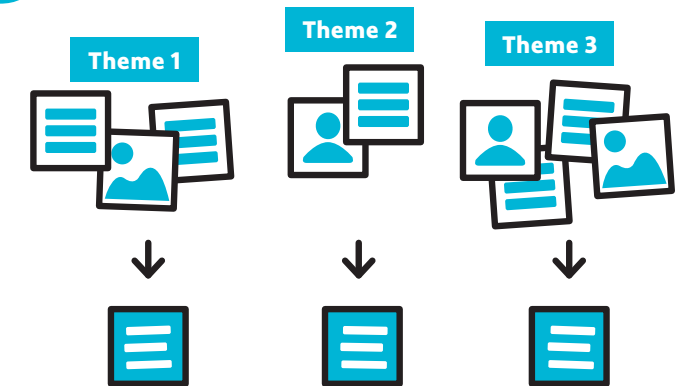
Share information from the field to help everyone internalize what you observed. Use creative presentation methods that help close the empathy gap.



ii: Identify important information

Analyse key findings to hypothesize why this is happening. Identify patterns, surprises and commonalities.

Choose the most important pieces of information to consolidate into themes.

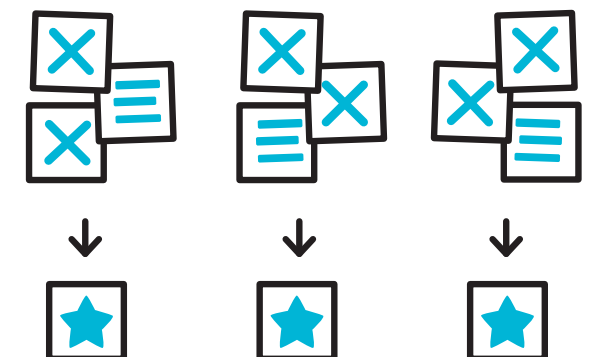


iii: Diagnose the underlying causes

Hypothesize: Assess why this is happening, drawing from research.

Debate: Can we prove ourselves wrong? What might we have overlooked? Misinterpreted?

Revisit and finalize: Articulate final diagnoses succinctly to help teams make sense of what was gathered in the field.



i Share user stories

As with any communication, sharing field research has the potential to be transmitted effectively or ineffectively. To be effective, this should be an engaging, detailed — and even playful — team activity.

There are many methods for sharing what you learned with your team members. The presentation method allows colleagues to passively receive information. The interactive method walks colleagues through a storyboard of events as recounted by a user; asking them to view a wall of pictures depicting a user’s lived environment; or inviting them to listen to an audio recording of the crying babies and shouting physicians in a clinic waiting room.

While the options for inviting team members into the worlds of our intended users is vast, **what effective techniques share are examples of the concrete over the abstract.**

For example, video clips of a chaotic afternoon at a clinic can help team members empathize with a mother who was reluctant to bring her children there. Instead of a generalized conclusion that “moms complain about the clinic because it’s stressful,” this helps team members to viscerally understand why.

Another technique is to tell the story from the user’s experience and viewpoint. This avoids the unintentional addition of judgement (how you think they should behave or what you want them to do).

Using notes from ‘record field research’ along with material gathered from the

field, transcribe what you have seen and heard in the field for your team members.

Sharing stories allows you to bring the context of the user with you through the rest of the process, ensuring you are designing a solution with empathy that is addressed to them. Rely on sensory sharing as much as possible through visuals of the location or person. Examples of share back activities include:

Presentation: Use a slideshow to share photographs and quotes from the field. Remember to keep it based on observations and stories, without including your opinions (yet).

Gallery walk: Place large printed photographs taken in the field around a room. Each picture should include a caption of something notable that you/your team observed.

Storyboards: Draw simple storyboards to walk your team through a story, a setting or a process you observed. Look at the event through the user’s perspective.

Video or audio share: Play back audio or video from the field. This could be a time lapse from a camera that captured daily movement through an environment. Sharing these assets transports team members to the field.

Quote

What was the most memorable thing they said?

Portrait / images

Attach photographs here

Their story

Who are they? What type of user do they represent?

Environment

What you noticed about their home, community or work place.

Connections and relationships

Network map of the people and organizations they are connected to.

Objects

Physical and digital objects they use.

- Morning
- Mid-day
- Afternoon
- Evening



ii Identify important information in stories

With the information from ‘share user stories,’ prioritize what is surprising, familiar from other contexts or suggests a pattern. These themes are likely to be the most important information.

Surprises should not only be considered anomalies; when performing in-depth qualitative research, extreme behaviours or beliefs may be indicative of a previously overlooked root cause. Second, if you saw something familiar in other contexts, it is possible that you are seeing a well-observed, common challenge of health programmes. Finally, spotting a recurring theme—a pattern across multiple observations and stories—suggests a behaviour that is not an aberration, but instead one that is being shaped by an environment affecting many users.

As with ‘share user stories,’ the ‘identify important information’ process can take many forms, but we recommend allowing for both group and individual analysis. This accommodates all the ways team members may process information best; in isolation, out loud, in written words or in scribbled diagrams.

After sharing your field observations and stories, make time for individual reflection on the information presented. **Ask colleagues to write down, on sticky notes, what surprised them, what reminded them of past observations (in this or other contexts) and what jumped out as patterns.** Working independently in the beginning widens the scope of what the team finds important, and allows you to start with more possibilities.

After independent analysis, invite team members to share back their interpretations of what seemed important and why. **Grouping the sticky notes by common themes on a wall can provide a quick visualization of what, collectively, appeared to the group.**

It is now up to you to reflect on information that has been prioritized and isolate what you believe to be the most important themes. For example, perhaps a common pattern identified by your team was the persistence of an ‘intention-action’ gap: Mothers consistently self-reported their belief in the value of vaccines and want to access them, but seem to defer the action to an undefined later date.

The ‘identify important information’ process should conclude with a synthesized list of themes that include surprises that stuck out, familiarities from this or other contexts and patterns in the research. You will end this step with the perspectives of an entire group regarding what might be most important from your user research.



Place the most important **themes** emerging from field research in your ‘field notes map’ next to the learning goal and assumptions they address.



Mistaking the value of data

During ‘identify important information’, we face a key risk: The tendency to assign too much importance to the mistaken interpretation of information.

Consider, for example, research conducted in Mozambique. In both surveys and focus group discussions, researchers discovered that a portion of the population held misconceptions about vaccinations, or demonstrated a “general lack of accurate knowledge.” Mothers stated that vaccines cure disease, that it is dangerous to vaccinate a sick child and that receiving more than one vaccine in a day can be dangerous.

If evaluating this information on its own, it may be tempting to make an erroneous

conclusion: These misconceptions negatively influence immunization outcomes. However, the researchers also found that in some areas, where misconceptions were more prevalent, immunization coverage was actually higher.

By contrasting these findings to other pieces of information—for example, first-hand accounts that “virtually every mother” wants to have her child “completely vaccinated”—researchers were careful to not give disproportionate value to an observation’s importance. Instead, they found that the “overwhelming barrier for mothers who have never had their child vaccinated was... distance to services.”⁴⁴

⁴⁴ Sheldon and Alons (2003), ‘A Study to Describe Barriers to Childhood Vaccination in Mozambique’.

ii Identify important information in stories

Isolate the most important pieces of information from 'share user stories' and cluster into themes. These themes will be further investigated during 'diagnose the underlying causes.' Consider sharing user stories and identifying important information during the same team work session.



Independent analysis

After (or during) 'share user stories,' individual team members should note important information—one thought per sticky note—according to the below criteria for important information.



Group analysis and generation

Share sticky notes from the independent analysis in small groups. Use each other's sticky notes to generate additional notes about what seemed important (refrain from criticizing what others share).



Cluster themes

Group the sticky notes by common theme on a wall—what collectively stood out to the group?



Add final themes to your 'field notes map' next to the learning goal and assumption(s) they respond to.

Criteria for important information



Surprise:

Does the information cause you to raise an eyebrow?



Familiarity:

Have you seen this before in other contexts?



Pattern:

Are there recurrences you spot across stories and observations?

Example themes

Source

Caregivers speak consistently about both the source of the vaccines and the sources of information behind vaccines; they are assigning importance to where vaccines are made and questioning the veracity of what HCWs are telling them.

Rumour

Most caregivers can recite a similar rumour about a new vaccination causing illness, suggesting broad recognition of a repeated story; at the same time, caregivers deny the rumour's plausibility in interviews.

Specificity

Non-vaccinating caregivers affirm the importance of immunization but are continually pushing the task into the future; they express immunization's benefits in abstract and general terms, and the costs in specific and concrete terms.

iii Diagnose the underlying causes

We shared what we saw and heard in the field — and forced ourselves to identify the information that seems most important. **Diagnosis asks us to hypothesize why the obstacles we identified exist.**

Generating hypotheses is the most challenging step, prone to assumptions and error. Moving through a rigorous process will ensure that we are fully and accurately investigating the underlying causes.

Diagnosis requires that we develop viable hypotheses about what is going on in the field; **referencing evidence from user research that works to either help validate or reconsider those hypotheses before we articulate them as final diagnoses.**

Finding the time

Strong diagnoses are arguably the most important — and most challenging — phase of interpretation. Determining the most probable cause of challenges facing users is the strongest link between research and interventions. Without sufficient diagnoses, interventions may rely on mistaken speculation. Unfortunately, finding the time to form thoughtful diagnoses is difficult.

This is understandable. In much of the day-to-day work of those involved with health programmes, situations arise and

we are called upon to act quickly. From an unexpected outbreak to the roll-out of a new initiative, we are sometimes compelled to bypass considered diagnoses in favour of speedy implementation.

We may also face administrative constraints. Programme planning may not permit empathic user research. Too often, conducting thorough analysis feels like a luxury. However, finding the time and permission to engage in the diagnostic process will undoubtedly lead to more effective (and less wasteful) interventions.

Hypothesize

Developing a hypothesis is a combination of using evidence gathered from the field along with educated guesses about causal factors. There may be multiple causes behind a single obstacle, and therefore multiple hypotheses.

Your field notes map now includes themes from field research. You will begin to theorize about the causes that shape the obstacles you identified.

Example:

Suppose you learned in the field that most mothers really want to get their children vaccinated. Nearly every mother you speak with tells you exactly that and appears to mean it. There is a strong stated intention. When asked during a group discussion, mothers could recite the general benefits of vaccines and definitively affirm that they want their children fully immunized.

During one-on-one interviews in mothers' homes, you collected information about their practical knowledge, such as where the clinic is located and when their next appointment is. A pattern soon emerged, among mothers with under-vaccinated children, most eagerly agreed that vaccines were important but could not accurately recite when and where they were due for their next appointment. In contrast, mothers whose children were fully up-to-date could recite that information, or they were able to easily look it up in their personal records. It would seem that this practical piece of information separated those who got immunized from those who did not.

Theme 1: Most mothers are aware of immunization benefits and intend to vaccinate their children.

Theme 2: Mothers with under-vaccinated children cannot remember when and where the next appointment occurs.

Hypothesis #1: The intention-to-action gap is widest with mothers who lack the mindspace to keep track of appointments.

Hypothesis #2: Lack of practical knowledge around appointment times might be what is keeping mothers from fully vaccinating.



Debate

Debating our diagnosis is not about arguing among team members. Instead, debating is about trying to prove ourselves wrong. What might we have overlooked? Misinterpreted? Neglected to ask about entirely?

Debating is the process of stress-testing our initial hypotheses by finding competing and affirming pieces of information from our research. By the end of this exercise, you should be able to (1) dismiss initial hypotheses that do not hold up to more scrutiny; and/or (2) refine what you have with additional evidence.

Continued example:

Let us bring the previous hypothetical diagnosis into question. What other information might have been gathered that could contradict—or at least modify—the conclusion we came to?

Consider the fact that mothers were asked about their beliefs and intentions in a group setting: In front of their peers, they collectively agreed that vaccinations were good, and that they wanted to get their children immunized. But perhaps they would have given different answers out of sight of their peers? Maybe some could not remember when and where to go for their child's next vaccine because they had already decided not to go, and so did not bother with those unnecessary details?

Going back out into the field, we set up one-on-one, private conversations with mothers. During our at-home visits, we ask about any concerns they have regarding vaccinations. A few mothers say that they are a bit nervous about their child getting too many vaccines,

especially in the same day. This is mentioned inconsistently among them. We also follow up on the practical information: We ask to look at their health cards and find that the information is right there, but neither we nor the mothers can read it. The date, time and place scribbled by the HCW is illegible.

We ask the mothers why this information was not clarified at the clinic. It becomes clear that if they had asked the HCWs for clearer information, they might have been scolded. Or worse, these proud mothers may have risked seeming illiterate. During our interviews, none seemed particularly willing to follow up when information given to them at the clinic was not clear.

Additional factor 1: Answers about beliefs and intentions were given in a group setting.

New evidence (individual conversations): Conversations only uncover additional concerns about too many vaccinations; other answers consistent with group responses.

Additional factor 2: Inability to remember appointment times may be the result of not wanting to vaccinate, not the cause.

New evidence (individual conversations): Appointment information is present but illegible and mothers are averse to confirming the information.

Revisit

With new information, we revisit our initial hypotheses with a different perspective to rethink and rewrite as final diagnoses.

This last exercise should yield an improved diagnosis for each of the themes we placed in our 'field notes map.'



A stress-tested hypothesis has allowed us to create a more refined and insightful diagnosis. Capture each of your diagnoses in the 'field notes map.'

Continued example:

Our initial hypothesis seems to have been on the right track; the additional evidence we gathered now serves to make it stronger.

We acknowledge that other variables may be at play, such as concerns regarding multiple vaccinations. However, it seems possible that such a strong social norm contributing to immunization might mitigate that concern; it appears unlikely that it plays a significant role in preventing full immunization. What appears more likely is that the key pattern separating the fully from not fully immunized—a lack of practical knowledge around appointment times—is creating a significant barrier separating intention from action. We can articulate a newly improved diagnosis.

Improved diagnosis: Missing pieces of practical knowledge about when and where the next appointment occurs is preventing mothers from following through on their intentions. This is created by variables as minor as illegible HCW handwriting and caregivers too nervous to clarify.



iii Tips for diagnoses

Hypotheses are iterative, and may require additional research to validate.

Sometimes, additional research will refine a hypothesis. In other instances, new research might reverse our hypothesis. Either way, hypotheses should be considered iterative. Making observations is one thing—they are empirical. **Inferring the underlying causes of what we are observing leaves ample room for reconsidering and improving our hypotheses.**

Suppose we observed refusal by a group of users—caregivers who were not engaging with immunization services. Through interviews, we gathered stories about how mothers were not getting their children vaccinated because the vaccines, they heard, were coming from a non-Western country. A possible hypothesis might be that a lack of trust in producers of vaccines (performance trust) was leading to refusal.

To stress-test that hypothesis, we went back out into the field. Instead of just interviewing users this time, we also spoke to nurses and doctors, all of whom shared that mothers were indeed coming to the clinic. In fact, many were asking lots of questions about the source of vaccines. When the clinicians strongly affirmed that the vaccines were effective, some mothers acquiesced and some mothers did not.

In this case, it would be appropriate to refine our hypothesis. Observations such as mothers trekking to the clinic, asking lots of questions and making a new decision suggest that these potential users are not really hard-line refusers at all. In fact, it would seem there is quite a lot of room for persuasion. They are demonstrating normal information-seeking behaviours. As opposed to pinpointing lack of trust as the singular hypothesis, it is more likely that conflicting information is causing a form of decision-making paralysis.

Ambiguity and conflicting information have the tendency to incline people toward inaction: It is much easier to avoid a decision when the information you have gathered seems unclear or inconclusive.

Had we kept the initial hypothesis, we may have been careful not to flood the community with vaccine efficacy messages. With hardline refusers, we would risk a backfire effect. But now that our hypothesis suggests a slightly different scenario, we could very well test out a communication campaign that makes the efficacy of vaccines the dominant piece of information mothers receive. Iterative hypotheses will yield improved solutions.

Diagnoses should be mindful of over-reliance on past research and events.

When engaging in a fresh diagnostic exercise, including past research can be helpful. However, it is critically important that such knowledge (1) is not outdated; and (2) if still relevant, is not over-emphasized. For example, beliefs can change in potency and reach over short periods of time.

Separating existing knowledge that is helpful from what might put the current diagnoses at risk is a key challenge. It may be helpful to return to your 'assumption catalogue' (page 55).

In the Democratic Republic of the Congo, past research has highlighted the prevalence of "rumours and false religious beliefs" as a reason for "mothers' resistance" to vaccinations, particularly among hard-to-reach populations. For example, one piece of research found that:

- "[A] pastor wrongly told his community that the cases of polio... were caused by the poor quality of the anti-polio vaccine."
- "For some religious followers... the 'vaccine is a spirit of the devil and only God can immunize with the blood of Christ.'"
- "For others, AFP [acute flaccid paralysis] are caused by witchcraft and not by disease."⁴⁵

These findings may still hold true; they also may be outdated, or perhaps not as relevant to decision-making as they once were among community members.

A diagnosis focuses on a why a user is or is not acting, not on the presence or absence of an action.

Effective diagnoses suggest a reason for the persistence of a problem, not simply the absence of a solution. This may sound like splitting hairs, but the distinction matters.

For example, we might know that clinics in a given district have less well-trained HCWs than in others. A tempting diagnosis could be a lack of well-trained HCWs impedes vaccination rates. But this absence says nothing about a persistent problem as it relates to users; moreover, it also presupposes an appropriate solution (health care training).

Consider this alternative based on hypothetical information: When caregivers become frustrated because their questions are not answered by HCWs, they do not return to complete their immunization course. This diagnosis does not jump to an absent solution (trained HCWs). Instead, its emphasis is exclusively on the challenge facing the user and the possible reason behind it.

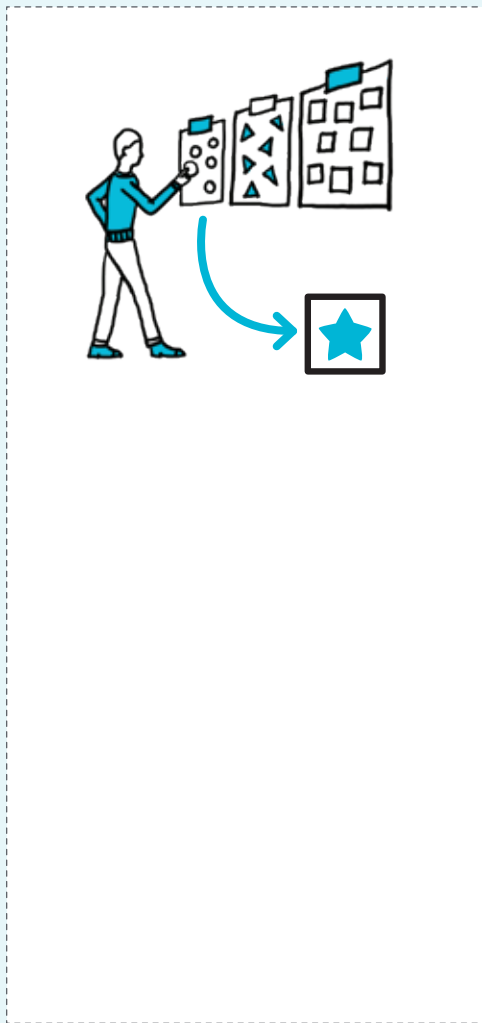
⁴⁵ *Communication for Immunization and Polio Eradication in the Democratic Republic of the Congo: A joint case study by BASICS, WHO and UNICEF (1999).*

iii Diagnostic worksheet

For each theme isolated by you/your team, create hypotheses by responding to each of the following:

Themes from 'identify important information in stories'

What theme are we about to examine?



Hypothesize

Ask yourself why this is happening. On sticky notes, write three or more causes that help explain or make sense of the theme.

| |
|--|
| |
| |
| |

Debate

Can we prove ourselves wrong? What might we have overlooked? What might we have neglected to inquire more about? What might we have misinterpreted?



Revisit

Refine hypotheses to delete, modify or rewrite to reflect any new information that has emerged during the debate.

| |
|--|
| |
| |
| |

Rewrite as final diagnoses

Articulate a final diagnosis for each theme.

| |
|--|
| |
|--|



Add final diagnosis to your 'field notes map' in line with the theme it responds to.

Theme examples

These examples offer some recurring themes of challenges that impede the ability of users to successfully use health programmes. They are not exhaustive. In fact, we hope that many of the themes you may be familiar with are not here, and that at least some of the themes listed here are less frequently discussed. Reviewing these challenges might help prompt new thinking about why the problems we witness in the field persist.

Omission

Action can be scarier than inaction.

People tend to favour harmful omissions over equally or more harmful commissions. In the context of vaccinations, caregivers can prefer to allow harm rather than do harm—such as allowing a child to get sick, rather than risk getting the child sick through side effects—even if allowing harm is much riskier and more likely to occur.

In a hypothetical scenario provided by researchers, subjects preferred not to vaccinate a child when risk of death from disease was 10 in 10,000, but risk of death from the vaccine was 5 in 10,000 or less. The discrepancy is explained by the fact that even in the riskier scenario, parents are concerned that they might be more directly responsible for harm (commission) than letting harm happen (omission).⁴⁶

46 Ritov and Baron (1992), 'Status-quo and Omission Biases'.

"It would be worse if the child died from the vaccine—because that is my fault—than if she died from the disease."

Hidden costs

Free is not always free.

In addition to non-financial costs (such as travel time), small financial costs can also become large impediments, especially among the poor. Even when health services are free, users can face fees for ancillary elements of the service—such as health cards—or encounter illicit fees.

In Malawi, researchers observed that although "there are no direct user fees, caregivers usually pay a small amount for a health card that is needed for the recording of vaccinations and other health status information."⁴⁷ In Nigeria, caregivers were required to show that they paid into an annual development levy fund prior to receiving vaccines. Despite the low cost (US\$3), "[m]ost of the poor cannot afford to do this and so desert public facilities, especially children's education and health services."⁴⁸

47 Holte, et al. (2012), *The decision to vaccinate a child: An economic perspective from southern Malawi*.

48 Oluwadare (2009), 'The Social Determinants of Immunisation in Ekiti State of Nigeria'.

"I had to pay a fee before receiving my child's health card after she received the vaccinations."

Social norms

Perceived group rules regulate behaviour.

People tend to behave in ways that conform to how they perceive others would be behaving. Demand-related behaviour can be affected by whether such behaviour is seen as normal or deviant in a given community.

As one study illustrated, "[p]eople have their children vaccinated because everybody does so and it seems the normal thing to do. There are not necessarily deep reflections behind mothers taking their infants to the child health clinic. They do so because everyone else does, and because it is what good mothers seem to do."⁴⁹

49 Streefland, et al. (1999), 'Patterns of Vaccination Acceptance'.

"I doubt that other mothers I know follow these guidelines."

Deferral

Bias towards the present.

People tend to devote most attention to present tasks while neglecting tasks with consequences farther into the future. This bias towards the present is further aggravated by poverty, which requires the poor to address pressing concerns at the cost of dedicating mental resources towards the long term. This can lead people to defer health-seeking behaviour, passing off actions and their associated costs (such as mental energy) to their future selves.

One study involving low-income parents in Baltimore found that for those "with limited time or resources... the importance of decision-making about vaccines may be far less pressing than other issues in the family's life... Among parents' concerns, which included drugs, street violence and negative peer pressure, immunization did not emerge as a high-priority issue."⁵⁰

50 Sturm, et al. (2005), 'Parental Beliefs and Decision Making About Child and Adolescent Immunization: From polio to sexually transmitted infections'.

"I needed to focus on this week's harvest; I can think about preventative health later."

Indecision

Ambiguity and uncertainty foster inaction.

The perception of missing information, conflicting information or unknown probabilities can incline people toward inaction. When the risks and benefits of a health service are unclear, caregivers are more likely to opt for inaction—not receiving the service—as the safer choice.

It is easier to avoid taking an action than to search for accurate (or convincing enough) information. As studies suggest, non-vaccinators in many cases are not refusing as much as they are sitting on the fence—what one group of researchers referred to as a "state of indecision." This can be caused, for example, "when doctors present different information than friends..."⁵¹

51 Betsch, et al. (2015), 'Using Behavioural Insights to Increase Vaccination Policy Effectiveness'.

"I'm being told different things by different people, so it's better that I just avoid this."

Fundamental attribution error

Blaming the person, not the situation.

People tend to place an undue emphasis on an individual's characteristics, or elements of personality, to explain his or her behaviour in a given situation rather than considering the situation's external factors.

In the context of health care, especially among HCWs, this misattribution manifests itself as a "tendency to be judgmental and blame patients for their illnesses (dispositional causes) rather than examine the circumstances (situational factors) that might have been responsible. In particular, psychiatric patients, minorities and other marginalized groups tend to suffer from this CDR [cognitive disposition to respond]."⁵² This might result, for example, in pegging a caregiver's decision-making to inherent 'laziness' rather than to contexts of poverty, potentially affecting the equitable rendering of services by HCWs.

52 Croskerry (2003), 'The Importance of Cognitive Errors in Diagnosis and Strategies to Minimize Them'.

"She must be a neglectful mother; she should be ashamed of herself for not getting her child immunized."

Theme examples

“I recently heard about a child that got very sick from the treatment, so I think I’ll avoid that one.”

Availability

The easier to recall, the more influential.

People tend to rely on immediate examples that come to mind when making a decision. A bias towards ‘easily available’ information—such as a recent story—can skew the probabilities people consider when evaluating the likelihood of possible adverse events.

Consider a story spreading through a community about an unlikely event, such as adverse effects from a vaccination. As one group of researchers concluded in regard to such a scenario, “negative side effects of vaccination, because they are rare, may get more attention than positive effects of vaccination, both in the news and in the community more generally, and this may contribute to overestimation of the likelihood of such events.” The result is that “[t]he choice between vaccinating and not vaccinating can therefore be seen as a choice between two gambles,”⁵³ rather than as a choice between a low-risk and a high-risk decision.

53 Cappelen, et al. (2010), ‘Demand for Childhood Vaccination: Insights from behavioural economics’.

“Seeing that information from the HCWs just makes me even more skeptical of it.”

Confirmation

Comfortable information takes priority.

People tend to seek out and agree with information that conforms to their pre-existing beliefs. Contrary information can be uncomfortable and so is more likely to be avoided. A bias towards information that confirms rather than conflicts with pre-existing beliefs can translate into not just ignoring contrary information, but doubling-down on pre-existing beliefs in the face of new information.

In one study comparing vaccinators to non-vaccinators, when the latter “were presented with the sort of risk-benefit information that leads many medical and public-health experts to conclude that the risks of the disease are worse than the risk of the vaccine, they became more committed to non-vaccination, not less.”⁵⁴ Another study witnessed a similar effect, finding that corrective information designed to reduce misperceptions around vaccines actually “decreased intent to vaccinate among parents with the least favourable attitudes towards vaccines.”⁵⁵

54 Meszaros, et al. (1992), *Cognitive processes and the decisions of some parents to forego pertussis vaccination for their children*.

55 Nyhan, et al. (2014), ‘Effective Messages in Vaccine Promotion: A randomized trial’.

“A new service? I’ll just do whatever I did last year.”

Status quo

Past behaviour predicts future behaviour.

When given the choice between continuing in the current state or making a change, the current state often wins. People tend not to change an established behaviour unless the incentive to do so is compelling. Therefore, past experience with health services is a very strong predictor of future behaviour. Importantly, this is less a matter of strong beliefs or thoughtful decision-making and more a matter of comfort.

As one study found, “those who had been vaccinated in the past were much more willing to be vaccinated than the average person, while those who had never been vaccinated were much less willing than the average person.”⁵⁶ In fact, among those who had been vaccinated in the past, this bias towards the status quo was more influential than their subjective perception of getting sick.

56 Tsutsui, et al. (2010), ‘A Policy to Promote Influenza Vaccination: A behavioural economic approach’.

“I was rushed, my child cried a lot and I didn’t have any time to ask questions. That’s what I remember most.”

Service experiences

The bad outweighs the good.

Negative experiences tend to outweigh neutral or positive ones, staying more prominent in people’s memory of an event. This bias towards negativity suggests that minor negative incidences during a health service experience can overshadow the positives.

In Ethiopia, small negativities, as perceived by caregivers, risked dominating their memories of vaccination-related experiences. Researchers observed that “outreach vaccination teams tend to arrive late, but leave on time, speeding up vaccination practices to the extent that needles are used immediately after sterilization, when they are still hot.”⁵⁷ While it may not be surprising that “[a]ttitudes and behaviour of health staff... are frequently cited as discouraging children’s vaccination,”⁵⁸ in many contexts, the disproportionate power of negative incidences adds a challenging element to improving perceptions.

57 Streefland, et al. (1999), ‘Patterns of Vaccination Acceptance’.

58 Favin, et al. (2012), ‘Why Children Are Not Vaccinated: A review of the grey literature’.

“I planned to take my child to the clinic, but I didn’t know if it was open.”

Practical knowledge

Missing information leads to inaction.

Despite having a positive intention to access health services, the effort to figure out the logistics deters action-taking. Needing to seek out practical information, such as when and where to access services, presents a cost (in time, in mental energy) and can therefore impede health-seeking behaviour.

In studying barriers to childhood immunization in Mozambique, researchers found that two thirds of mothers at various mobile brigades did not know when to return for the next vaccination. As the study concluded, this piece of missing information was, in part, to blame for suboptimal coverage—as opposed to knowledge about diseases or the perceived importance of vaccinations.⁵⁹ Another study on influenza vaccination in the United States of America found that even though logistical information was technically available to participants, vaccination rates decreased when it was not made immediately and easily available.⁶⁰

59 Sheldon, et al. (2003), *A study to describe barriers to childhood vaccination in Mozambique*.

60 Ross, et al. (2013), *Using Behavioural Economics for Postsecondary Success*.

“Other people might get sick from that disease, but it won’t happen to my kid. And if it does, I can take care of it.”

Optimism

It will not happen to me.

People tend to overestimate the likelihood of positive events occurring and to underestimate the likelihood of negative events occurring. This bias towards optimism can manifest itself in discounting the likelihood of contracting a condition or in overestimating the likelihood of surviving it, decreasing people’s motivation to seek out health services.

In studying parents who forewent a pertussis vaccine for their children, researchers found that many “believe that statistical analyses of pertussis and vaccine risks are accurate.” At the same time, they “believe that they do not pertain to their children.” This is, in part, due to a belief that “they have control over whether their child gets the disease or how it progresses”—an optimistic perspective on events that are largely out of their control.⁶¹

61 Meszaros, et al. (1992), *Cognitive influences on parents’ decisions to forego pertussis vaccination for their children*.

3c

Propose design opportunities

This step creates a bridge between research and solutions. During this step we translate the final diagnoses into prompts, or actionable questions that prepare your team to generate solutions. Prompts are a way of presenting the problems from user research as opportunities for inventive solutions. They help our teams begin to answer the overarching question: What is to be done?

To help write prompts that respond to the people we are trying to reach, we create 'persona profiles'. To help write prompts that respond to the challenges we identified during field research we create a 'relationship map', or system map. Together, these activities allow us to look at the problem from multiple angles and pivot from problem to possibility.

Each prompt prepares your team to brainstorm different categories of solutions, all of which could respond to the challenges identified in the diagnosis. By generating multiple prompts against the same diagnosis, we enlarge the scope of possibilities.

Final field notes

After forming diagnoses and articulating prompts, your field notes should be complete.

Take time to reflect on each row. Are there additional assumptions worth adding? Are the challenges diagnosed in some instances likely to be more important or weighty than others?

A completed wall of field notes will help link user research (Question 3) to the creative process of generating solutions (Question 4). Next you will conceptualize, design and prototype solutions that respond to each row.



There are three steps to move from diagnoses (why something is happening) to prompts (redefining challenges as opportunities):

i: Create persona profiles

Identify everyone surrounding the diagnosed challenge and describe them in more detail, including the service recipient and service provider.

Diagnosis example: While they may privately value vaccinations, higher-income caregivers decline immunizations provided by public services because of an association between vaccines and being poor.

Example personas for this diagnosis:

1. Higher-income caregivers (prioritized user group)
2. Health worker (service provider)
3. Mother-in-law (role that most influences the caregivers)
4. Community volunteer (role that advocates for health service)

ii: Draw the relationship map

To help analyse and make sense of the diagnoses, map the relationships between your personas, their needs and the people responsible for responding to their needs.

Relationship map example:

The example diagnosis showcases a tension between public and private beliefs and behaviours, highlighting social norms and influential identities affecting these caregivers. The relationship map shows these barriers and influences—for example, during 'preparation' a mother is ready to seek out vaccination, but doesn't mention it to close friends and family.

iii: Articulate creative prompts

For each diagnosis, articulate multiple 'how might we?' questions that will prompt teams to think about creative solutions.

Prompt examples (multiple prompts for each diagnosis):

- How might we help health workers deliver immunization out of sight from the caregiver's perceived judgement of peers?
- How might we frame community leaders' primary association with vaccines from poverty to success and well-being?
- How might we emphasize higher-income caregivers' identities as good mothers more than their identities as 'not poor'?



i Persona profiles

Remember your ‘key user persona’ in Question 1 —personas are realistic characters that are used to understand the needs, values, aspirations, abilities, limitations and personality traits of different users, along with the challenges they face and their desires for potential solutions.

Based on your diagnoses, create multiple personas. In addition to your prioritized user group, represent your caregiver’s interactions with community leaders, other mothers, HCWs, CHWs and other key players. These additional personas will help your team consider designs and plans from a point of view that is not their own.

You will present these personas along with prompts during Question 4.

Additional personas may be:

- Front-line worker
- Health care worker
- Family
- Child or individual
- Service provider
- School
- Community volunteer
- Religious leader
- Community leader
- Health centre staff

Place photo / drawing

Background
 What important life experiences or events have contributed to this person’s current situation? What social determinants of health influence his/her current situation?

Role / responsibilities
 Describe what his/her job is, or what role he/she plays in the community.

Name:

User type (priority population, HCW, CHW, caregiver, technician, community advocate, volunteer)

Environment
 What is the geography and what are the conditions in which he/she lives?

①

②

Influences
 Think about single behaviours that result from external pressures (rather than regular habits). Who or what are the influential stakeholders in his/her life?

Time
 What does a typical day look like? How does he/she divide his/her time? What does he/she spend time worrying about or celebrating?

Morning

Mid-day

Afternoon

Evening

Needs
 What frustrations does he/she have? What limitations does he/she encounter? Write as a quote—how would he/she say this?

“ ”

Existing state -----> **Improved state**
 (current behaviour) (ideal behaviour)

ii Relationship map

Often, we blame the moral character of caregivers or human error of health workers for what are really system failures. We draw the false conclusion that the people who made mistakes need to be reprimanded, retrained or more closely monitored. **Looking at the systems allows us to see beyond the symptoms (mistakes) to uncover the complex network of root causes.**

During this exercise, we will understand the interactions between personas and the existing system. Then we will identify gaps that can be turned into opportunities for design. In the next step these will be our creative prompts.

Two main insights emerge from mapping relationships:

1. First, we identify relationships in the social, technological and economic ecosystem to leverage. Considering the prioritized user group's influences at each stage of the 'caregiver journey' enhances our understanding of each relationship.
2. Second, we notice opportunities for incremental change. Remembering our 'small is big' guiding principle, we determine small barriers to remove that may lead to significant improvement.

During this exercise, we will understand the experiences of each persona, how they connect to one another and where their interactions present opportunities to redesign the journey.

List all users

On top, identify all the people and institutions that are connected to the prioritized user group. Start with your final personas from the previous step and include additional roles that relate to your challenge. Consider local, national and regional influences. Examples:

- Front-line worker
- Health worker
- Family
- Child or individual
- Service provider
- School
- Community volunteer
- Religious leader
- Community leader
- Health centre staff

Fill in the 'caregiver journey'

In the middle row, for each of the six stages of the 'caregiver journey', note existing needs and interactions for the prioritized user group. Use icons to categorize the interactions as positive, average or negative. Examples:

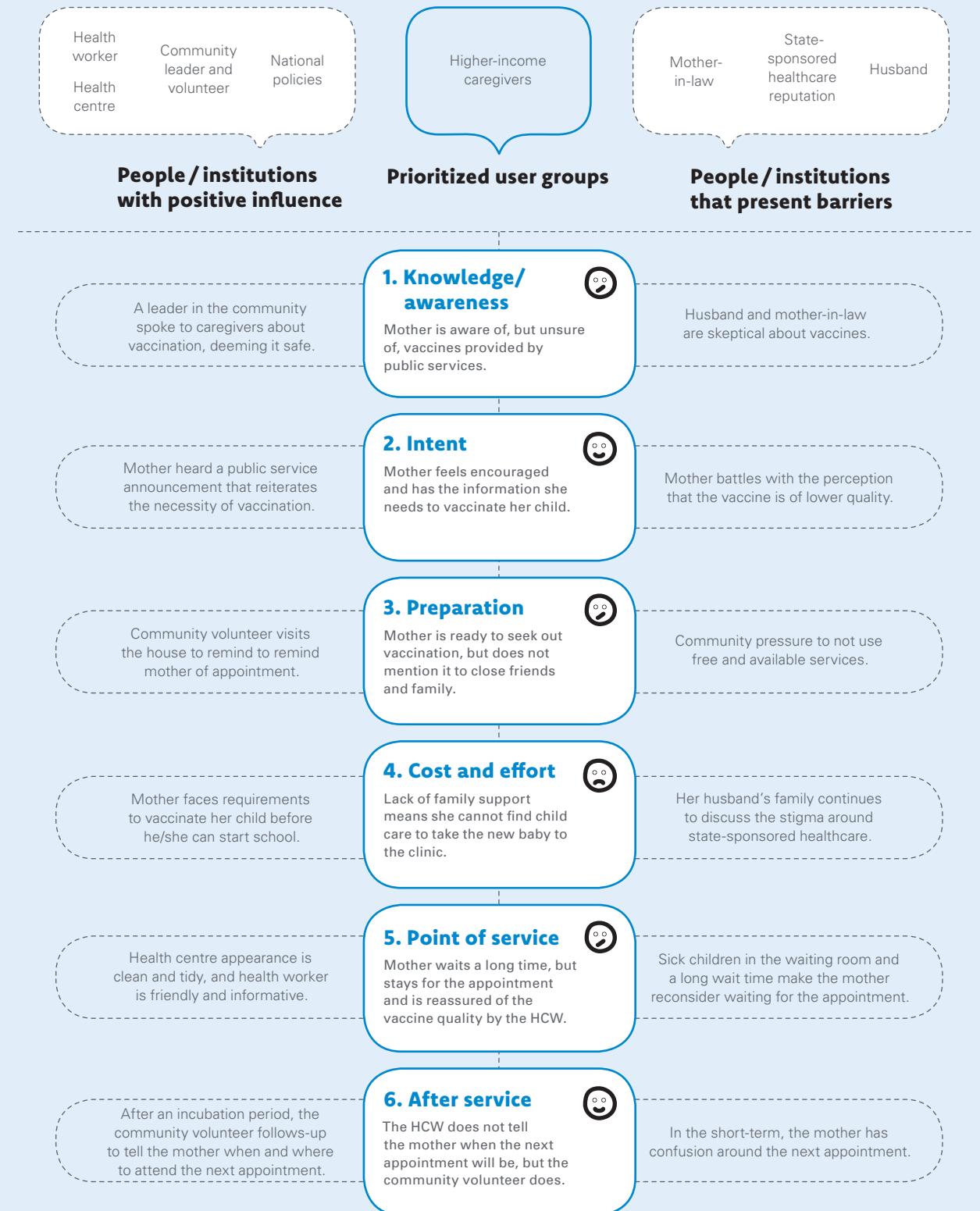
- Chains of command
- Decision-making inputs
- Funding
- Social links
- Familial links
- Patient-provider relationships

Chart social relationships and services that create positive influences and barriers

On the left, record the influences that support our goals. On the right, record the barriers that impede our goals. What gaps exist (funding, technology)? What attitudes are present that affect user experience in positive or negative ways? What makes it harder for users to get what they need? What points of leverage make it easier? Examples:

- Infrastructure solutions/gaps
- Communication solutions/gaps
- Funding/lack of funding
- People who can/cannot fulfill their responsibilities
- User knowledge about services
- Societal norms

Relationship map example:



iii Prompt formula

We use prompts to uncover solutions to our diagnoses. To write prompts, use the formula on the right, following these tips and examples.

Be open-ended vs. prescriptive

Prompts inspire and guide your team to generate multiple solutions (more on that in Question 4). Open-ended prompts do not assume solutions but allow teams to consider as many solutions as possible.

To check if your prompt is sufficiently open-ended, ask yourself: Can I immediately think of more than a single solution to the problem? If not, you may have been too prescriptive. The opposite can also be a problem: Prompts that are too general feel overwhelming and difficult to comprehend. Prompt-writing is a balancing act.

Respond to the diagnosis

If a prompt is crafted just right—not too general and not too prescriptive—it must also directly address the problem we identified as our final diagnosis. A prompt that does not directly address the problem risks leading your team down a wrong path that yields ineffective solutions.

Incite inspiration

Feeling inspired matters. The best solutions come from prompts that excite you and your team members. Does the prompt feel like a call to action? Is it a mandate to explore interesting ideas? Does it immediately make you start thinking of solutions?



Add final prompts to your 'field notes map' next to the diagnosis they correspond to.

Diagnosis #1:

Poorer mothers feel anxious about going to clinics because they receive derisive judgment from HCWs, many of whom attribute under-immunization to mothers' laziness.

Not-so-good prompt:

How might we improve interactions between HCWs and patients?

This prompt is too vague. A too-general prompt that does not respond to the important details in the insight fails to give your team clear enough direction on how to address the challenge.

Better prompt:

How might we **sensitize HCWs** to the tough challenges facing poorer patients so that they **demonstrate empathy**?

Prompt = How might we + **verb** + **user group** + **response to diagnosis / gap in relationship map**

Diagnosis #2:

Confronted by immediate challenges, parents are deferring their visits to the clinic while thinking that they will go soon enough.

Not-so-good prompt:

How might we use non-financial, micro-incentives to motivate mothers to get their children vaccinated?

This prompt is too specific. Rather than guide your team's problem-solving, this prompt prescribes a solution. Non-financial, micro-incentives might very well be a strong idea, but it is certainly not the only one.

Better prompt:

How might we **give mothers** reasons to act today rather than wait to return to the clinic?

Diagnosis #3:

Despite a recent campaign promoting immunization as a public good that helps everyone, most parents think that their neighbours do not get their children vaccinated and so they do not feel compelled to act.

Not-so-good prompt:

How might we convince parents that getting vaccinated will protect the entire community?

This prompt fails to correctly respond to the diagnosis. It ignores the information that as long as parents don't perceive their neighbours accessing vaccinations, they will not bother getting their own children immunized.

Better prompt:

How might we **reveal to parents** the actual volume of community members accessing vaccinations, demonstrating a widespread social behaviour?

How could we respond?

Introduction: Experimental solutions

This phase outlines a three-step creative process to generate innovative solutions and test their efficacy. It will encourage divergent thinking: Generating many ideas before converging on the most desirable, viable and feasible solutions.

The creative process of generating and evaluating solutions is experimental and iterative. The methods for conceptualizing, building and testing ideas require that we revisit initial concepts and revise early designs. Each iteration is a closer approximation that brings us nearer to the final, optimal solution.

This phase should not involve undue time and resources. Months of planning are not necessary. The exercises are intended to enable rapid ideation and feedback gathering. Early, promising solutions will be modified and improved and less promising solutions will be cut prior to investing too many resources. By the end of this question, we will have a set of solutions ready for initial implementation in the field.



4 Methodology

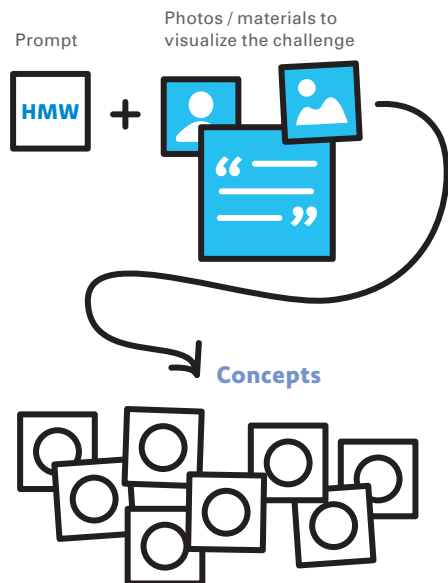
While these phases are linear, they are also iterative. It is likely that prototyping will generate feedback that forces changes to the design of an idea, or in some cases, will require that teams go back to conceptualizing new ideas entirely.

4a: Conceptualize solutions

Time required: Hours
Team: Additional participants
 (community leaders, health workers, colleagues, NGOs and government partners)

With an extended team, quickly generate many possible solutions for each prompt. Assess the solutions to identify two to three promising ideas per prompt.

- Assess concepts
- Solution examples

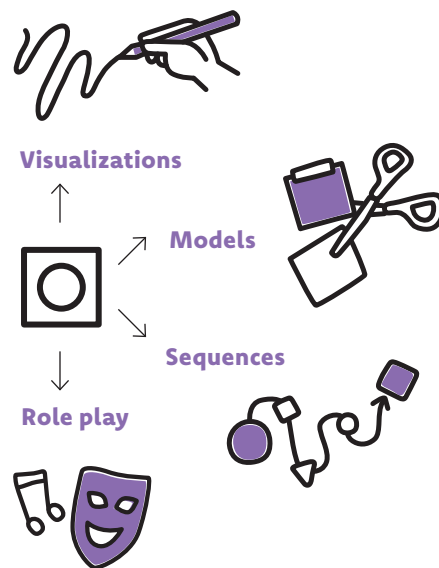


4b: Design quick examples

Time required: Hours
Team: Pairs (subset of core team)

Make ideas concrete through initial outlines, models or rough sketches of ways to implement promising concepts.

- Design examples

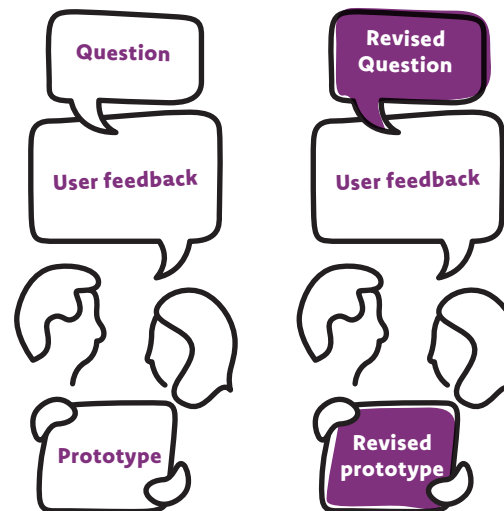


4c: Prototype design with users

Time required: Days
Team: Core team of 3-5

Define learning goals for each design, then select activities that will test (prototype) the design in the field. Take draft ideas into the field to test with, and get feedback from, users.

- Prototype planning
- Prototype evaluation



Final output: Tested solutions

At the end of this phase, you have designs that respond to initial user research and have been tested with the user in their environment. Initial design prototypes have been evaluated and necessary adjustments have been made.

4a

Conceptualize solutions

This first step is built on the premise that good ideas are born from a lot of ideas. Conceptualizing is the exercise of generating as many solutions as possible that might help to solve the challenges presented in your prompts.

Conceptualizing is centred around team brainstorms, which require thoughtful preparation and disciplined facilitation. Conceptualizing ends with a short evaluative exercise to categorize the solutions coming out of a brainstorm, highlighting top contenders.

Many, many solutions

Some programmes have a familiar and well practiced set of solutions. Behaviour change communications might be an example. It is possible that this creative process will suggest a communications solution to a given challenge—but it is not a given. We will aim to push ourselves to think differently about what constitutes a potential solution.

We may discover that a creative solution does not require printing a single poster, or spending a single dime. From changing the timing of outreach services, to communicating a message differently; from simplifying the steps a user is required to go through to access services, to offering SMS reminders; from activating a latent social norm, to increasing the importance of a positive identity—both familiar and less familiar ideas should emerge during this process.



What is a creative process?

To illustrate the idea of a creative process, consider the example of a public health organization in Zambia that recruits and trains hairstylists (agents) to educate their clients on HIV prevention and distribute condoms. The organization, in collaboration with researchers, sought to address issues of agent motivation in an effort to increase condom sales. One idea aimed to do so by incentivizing agents with financial rewards. Another idea imagined a type of non-financial reward:

“[A]gents are provided with a thermometer display, akin to those used in charitable fund-raisers. Each sale is rewarded with a star stamped on the thermometer, which is labelled as measuring the stylist’s contribution to the health of their community.... In addition, stylists were told that all those who sell more than 216 packs over a year would be awarded a certificate at a ceremony.”⁶²

These ideas were then piloted and evaluated. Agents were either given a 90 per cent margin on condom sales, a 10 per cent margin on condom sales (two very different levels of financial rewards), the stars and thermometer for public recognition or were given nothing at all. Agents receiving the public recognition scheme sold, on average, over twice as many condoms as those in any other group.

A creative process is one that liberally experiments with different ideas until the best ones materialize. It generates multiple (and often competing) ideas and tests them out—even if on a small scale for the purposes of improving some ideas while discarding others. **It does not take a specialist—it takes a commitment to open-mindedness and experimentation.**

⁶² Ashraf, et al. (2014), ‘No Margin, No Mission? A field experiment on incentives for public service delivery’.

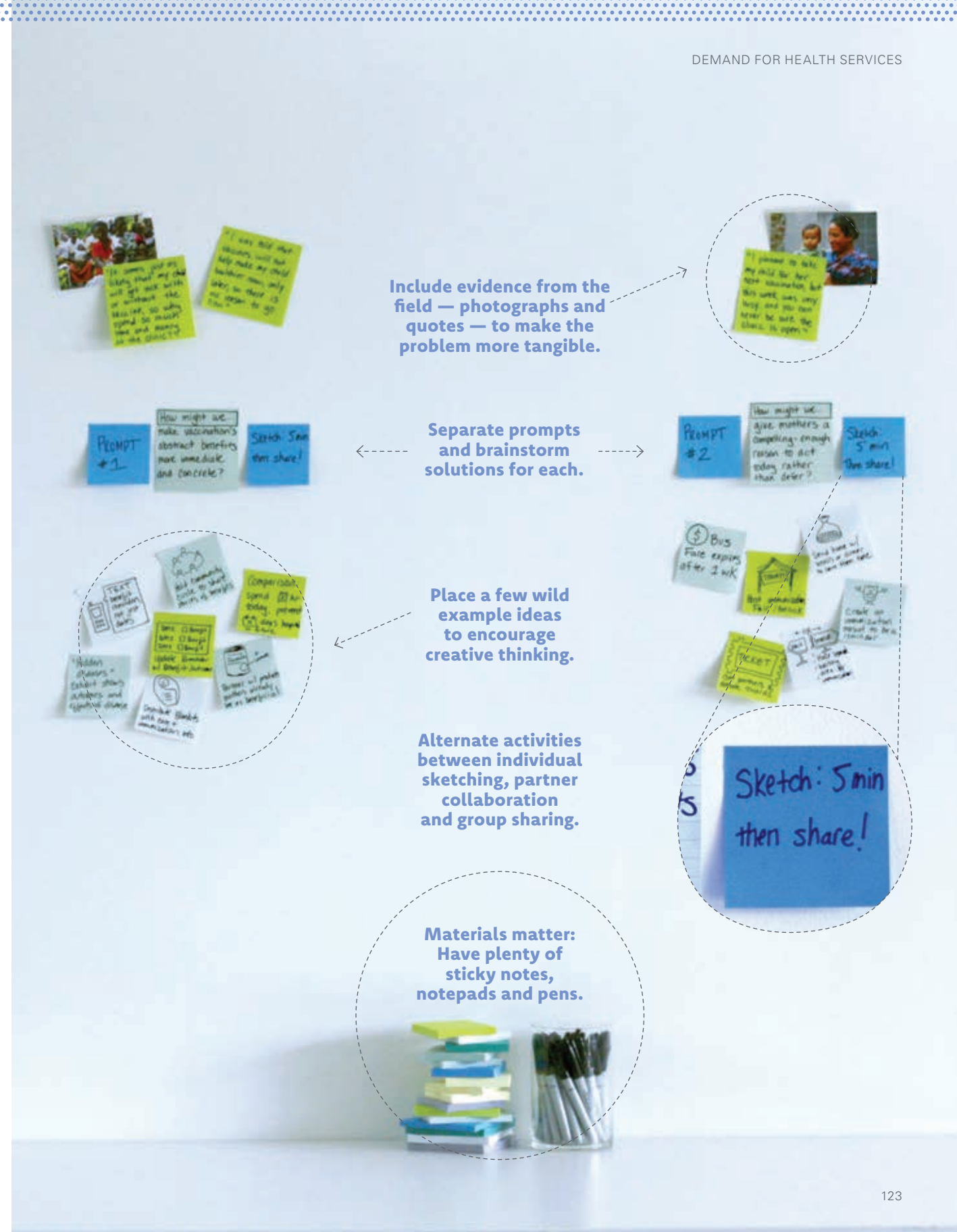
i Prepare for a brainstorm session

Facilitating a productive brainstorm can be challenging—too often, brainstorms become undisciplined conversations. To get the most out of a brainstorm, clearly communicate the purpose and enforce the rules (e.g. time).

To start, schedule an uninterrupted period of time and invite additional participants. Divide the available time between each prompt, usually five minutes of generating ideas followed by five minutes of sharing ideas. Sometimes this is repeated for the same prompt so participants can improve upon each other's ideas.

Each row in the 'field notes map' ends with a diagnosis (which describes a challenge) and a three or more prompts (that suggest ways to approach the challenge). Creative brainstorming gives us dedicated space to think big and broadly about each prompt. In preparation for brainstorming solutions:

- Freshly transcribe each prompt: Print it out to fill an entire piece of paper.
- Gather supporting material relevant to each prompt: Pictures help team members visualize the challenge embodied in the prompt.
- Collect materials for participants to write and draw on.



Include evidence from the field — photographs and quotes — to make the problem more tangible.

Separate prompts and brainstorm solutions for each.

Place a few wild example ideas to encourage creative thinking.

Alternate activities between individual sketching, partner collaboration and group sharing.

Materials matter: Have plenty of sticky notes, notepads and pens.

ii Brainstorm concepts

The process of generating a large volume of ideas (brainstorming) happens best in groups, with team and community members originating, sharing and combining ideas.

The initial objective of conceptualizing is to generate a substantial volume of ideas, not only good ideas. Disciplined brainstorming can work quickly and efficiently to generate that volume. We will work to design good ideas later; but a necessary prerequisite to good ideas is a large enough amount of them to work with.

Brainstorming creative solutions can be done over the course of many days; but it can also successfully be done in an afternoon of dedicated and uninterrupted time. Either way, brainstorming should be an intentional and well-defined period of time. At the end of a team brainstorm, you will have a collection of ideas and solutions that respond to each of the prompts from the field notes in the previous phase of work.

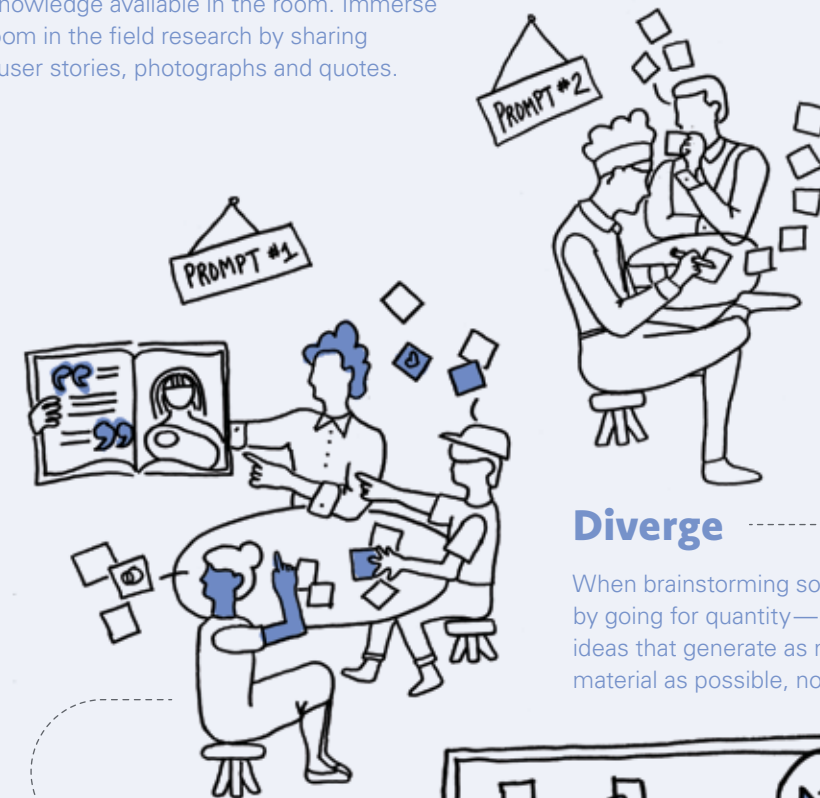
Generate a large quantity of possible solutions to each of the prompts drawn from your 'field notes map'. To start, schedule an uninterrupted period of time and invite additional participants from the community.

Rules of brainstorming:

- Build off of each others' ideas— do not be afraid to suggest alternatives or additions.
- Aim for quantity over quality.
- Turn off phones! Concentrate on the ideas for short, intense spurts.
- Draw what you can—a picture is worth 1,000 words.
- Go for ideal, wild ideas!
- Do not eliminate or critique ideas (save for the next step, 'assess concepts').

Share user stories and scenarios

A great idea is driven by the collective expertise and knowledge available in the room. Immerse the room in the field research by sharing back user stories, photographs and quotes.



Diverge

When brainstorming solutions, always begin by going for quantity—large volumes of ideas that generate as much brainstormed material as possible, no matter the quality.

Converge

With a large volume of ideas on the table, coalesce around recurring themes—what categories of ideas are surfacing? Use voting dots (three stickers per person) to let participants select the concepts they find most compelling.



iii Assess concepts

After you have a large volume of ideas that are responsive to each of your prompts, you are in a position to make decisions about which ideas deserve to move forward.

Effective brainstorming should generate a broad spectrum of ideas, from the obvious and low risk to the unconventional. Ideas that veer towards the latter can be the most important because they can often be made more feasible. An idea that is not quite plausible may still have elements that are worth exploring. The process of selecting candidate ideas to move forward is not only about selecting the top ones from your brainstorming; it is also about editing imperfect ideas with promise.

The 'assess concepts' tool is meant to aid in the process of both selecting top ideas along with identifying imperfect but interesting ideas that may require further thinking. The objective of this step is to select a group of ideas from your brainstorming to be designed for the purpose of learning more. Ideas here are far from final. Instead, they are ones that seem to respond well to your prompts, and that deserve to be explored through prototyping.

At the minimum, you should aim to select at least two to three ideas per prompt. If you only land on a single idea at this step for a particular prompt, you may risk coming up empty-handed if that sole idea later becomes ineligible. Multiple ideas for each prompt increase the likelihood of finding one that works.

'Assess concepts' matrix

After brainstorming, use the chart to the right to organize ideas for each prompt you used. You will need to create multiple charts—one for each prompt.

Place a sticky note (containing one idea each) into the quadrant that seems appropriate. **Select two to three ideas from the 'obvious wins' and 'innovative possibilities'** that are interesting and show promise.



Very responsive to prompt

Obvious wins

Ideas that are relatively easy to make happen, and directly respond to the prompt.



Innovative possibilities

Ideas that are clearly responsive to the prompt, but may be difficult to implement.



Safe

Unrealistic

Building blocks

While it is possible that your programme could feasibly implement these ideas, they need work. Adapt these to make them more responsive to the challenge captured in the prompt.



Unsuccessful tries

These ideas are neither responsive to the prompt nor easy to make happen. Discard them!



Unresponsive to prompt

Solution examples

The following stories are meant to instigate your team's creativity, drawing inspiration from various ways that other health programmes have creatively responded to the challenges facing their users. These examples are not meant to be an exhaustive list of solutions. Instead, examples from solutions elsewhere can help to stimulate your team's brainstorming efforts.

Create social proof

As social beings, we modify our behaviour by conforming to perceptions of group norms and expectations. People are generally more likely to follow health advice when it is presented in groups of peers, rather than individually.⁶³

Sometimes, a norm is not obvious. If there is little visible proof that a group is collectively practicing some behaviour, it reduces the power of positive group norms.⁶⁴ In some cases, vaccinations fit this phenomenon; caregivers who do not access vaccinations may simply not know that their peers are doing so, and therefore are not being motivated by a perception that getting vaccinated is the norm in their community. The idea of providing social proof aims to harness the power of norms by making them publicly visible.

Experiments in India and Timor-Leste demonstrate the power of social proof. In the My Village My Home project, a large poster was displayed in a public space.⁶⁵ On

the poster, clinic staff recorded the birth dates of all infants and made note of every immunization along a timeline. The poster turned normally private information (dates of birth and vaccination status) into a visible record.

This simple public tracking scheme not only made it easier for outreach workers to notify families of a child's next vaccination date, but also broadcast a positive behaviour exhibited by a majority of the community. It visualized previously unseen behaviours (one's peers getting their children vaccinated). By making others' behaviours visible in a safe context, the posters tapped into subtle social pressures to mobilize

those with under-vaccinated children. Caregivers were dually accountable to the infants and to the community as a whole.

The intervention proved motivating. In India, tMy Village My Home pilot communities achieved immunization rates of 80 per cent, considerably higher than comparable districts' rates, which ranged from 49 per cent to 69 per cent. As a World Bank report noted, social proof ideas are especially potent in contexts where "the difficulty of observing a behaviour makes it difficult to correctly estimate how common it is."⁶⁶ Previously, community members may have assumed accessing vaccines was uncommon; a public visualization changed that.

Address gaps in information

Practical information enables users to locate and process only the most critical details about a programme. It tackles issues of vagueness and over-communication, providing only the necessary information for people to follow through on their intentions to access services.

Practical information seeks to remove any 'friction' in a decision-making and action-taking process. **From simple visualizations (like maps) to tactile actions (like writing down an appointment time), making the most important pieces of information salient helps remove obstacles to accessing a health service.**

One key to isolating practical information is understanding precisely the gaps in information that currently prevent a user from completing an action. For instance, a landmark 1965 study on tetanus shots on American college campuses compared the efficacy of merely warning

students of the dangers of tetanus with an intervention that provided critical pieces of information to practically assist students with accessing the vaccination.

When only verbally warned about tetanus and encouraged to get the shot, coverage was 3 per cent.

Another group of students received key pieces of practical information: A campus map with the location of the infirmary circled, a list of times when immunization was available and a prompt to schedule an appointment immediately. Twenty-eight per cent of these students ended up getting vaccinated—a ninefold increase.

The experiment demonstrated how practical information can help overcome small inconveniences that might otherwise stand in the way of a user taking action. Noting the value of the map, for instance, a review of the study suggested that "these [students] may have already known how to get to the infirmary or had access to the same campus map. However, having the map at the right time made the information salient, reduced the hassle of looking for its exact location or reduced the thinking required to get there."⁶⁷

⁶³ Bertrand, Mullainathan and Shafir (2006), 'Behavioural Economics and Marketing in Aid of Decision Making Among the Poor'.

⁶⁴ For example, the general public in the United States significantly underestimates childhood immunization coverage. When asked to estimate the proportion of children who receive no vaccinations, only 9 per cent currently estimate "1 per cent or less," whereas over one third estimate the figure to be somewhere between 21 per cent and 30 per cent. (Kahan (2004), 'Vaccine Risk Perceptions and Ad Hoc Risk Communication: An empirical assessment'.

⁶⁵ Jain, et al. (2015), 'Engaging communities with a simple tool to help increase immunization coverage'.

⁶⁶ World Bank (2015), *Mind, Society and Behaviour*.

⁶⁷ Ross, et al. (2013), *Using Behavioural Economics for Postsecondary Success*.

Solution examples

Offer micro-incentives

Micro-incentives are small, motivating bonuses given to users that increase the adoption of a desired behaviour. They often help to cancel out small ‘costs and efforts’ that discourage users from accessing services, giving people a small reward for doing something that is often perceived as an inconvenience.

For this type of intervention to succeed, programme designers must have a clear understanding of which incentive(s) would work to sufficiently push a group of users towards the desired behaviour.

Research has shown that both small financial and non-financial incentives can be effective—but the appropriate incentive is different in different contexts and with different groups of users.

Financial:

In one experiment, college students in the United States were twice as likely to get an influenza shot when offered a US\$20 reward (19 per cent vs. 9 per cent). Researchers found that many students had a strong intention to get vaccinated, but perpetually postponed taking the necessary actions. (As the authors explained, “individuals postpone getting vaccinated, because the cost is immediate and the benefits accrue only in the future.”)⁶⁸

Why cash?: Researchers observed that extra money was highly motivating for college students. Even this (relatively) small incentive was enough to motivate twice as many students to take the time to vaccinate.

Non-financial:

In India, an organization provided families whose children completed a full vaccination course with a small bag of raw lentils. The actual monetary value of the bag was less than US\$1. A concurrent programme to increase reliable access to vaccinations pushed immunization rates from 6 per cent to 18 per cent in participating villages—but when the additional incentive of lentils was added, the figure jumped to 39 per cent, representing a more than sixfold increase. The researchers hypothesized that a minor incentive helped to overcome small but powerful barriers, like procrastination among people juggling many competing priorities.^{69, 70}

Why lentils? In this resource-poor environment, the bag of lentils offered an immediate and tangible benefit to users. The long-term benefit of vaccinating was harder to visualize—but the lentils provided a compelling reason to act immediately.

Various other forms of micro-incentives have been studied across contexts. In Pakistan, DTP coverage at 18 weeks of age increased twofold compared with a control group when food and medicine vouchers were introduced.⁷¹ In rural Nicaragua, a food incentive increased turnout at mobile clinics by over 60 per cent.⁷²

As the authors of that study suggested, food in Nicaragua (rather than vaccines alone) proved an effective motivator because it “directly influence[d] a family’s economic welfare.” It turned caregivers’ focus from something abstract in the future to something tangible in the present.

Provide action cues

Action cues are reminders built into a programme’s design that prompt users to do something. They help to address issues like forgetfulness and procrastination, which prevent people from following through on positive intentions. Successful action cues present critical information to the user in visible, timely and actionable ways.

Visible:

To account for challenges like forgetfulness, in contexts where people’s attention is spread thin, action cues bring only the most important information to the user’s attention, making it easier to see.

For instance, in Peru, mothers are typically given a handwritten paper reminder at clinics that is easily lost or misinterpreted. One organization is piloting a solution: The Alma Sana bracelet—a durable, customizable and colourful bracelet that records a child’s immunization schedule. Infants wear the bracelets on their wrists as a physical and always visible reminder to the caregiver (and community). In a pilot study, 91 per cent of mothers reported that the bracelets helped to remind them of their next appointment, and 90 per cent said they plan to keep using them. The bracelets cost US\$0.10 each.⁷³

Timely:

Action cues work best when they can prompt users with information on a timely, repeated basis through channels that they consistently access.

SMS reminders have proven effective in several settings. In Kadoma City, Zimbabwe, one study found that 95 per cent of children in a group that received SMS reminders were fully immunized at 14 weeks, compared with 75 per cent of children in a similar group that did not receive the reminders. Those who received reminders—sent seven days, three days and one day before a scheduled visit—were also 75 per cent less likely to delay.⁷⁴ A majority of the intervention group preferred to receive a reminder the day before their appointment: A time-sensitive feature made possible by SMS.

Actionable:

Action cues should result in just that—action. Rather than assume that people will figure out the requisite steps to take on their own, action cues should dictate what to do.

Research shows that encouraging people to take an action with a generic reminder letter often is not enough. In one experiment regarding influenza vaccination, letters that included specific information about where and when to get the vaccination resulted in a 28.2 per cent vaccination rate, compared with 19.2 per cent among users who only received general encouragement to get the shot.⁷⁵

As the researchers hypothesized, lack of action cues was a more important obstacle to overcoming the gap between intentions and actions than people’s attitudes about receiving the vaccination.

68 Bronchetti, Huffman and Magenheimer (2015), ‘Attention, Intentions and Follow-through in Preventive Health Behaviour: Field experimental evidence on influenza vaccination’.

69 Banerjee, et al. (2010), *Improving Immunisation Coverage in Rural India: Clustered randomised controlled evaluation of immunisation campaigns with and without incentives*.

70 UNICEF (2011), ‘Child Poverty Insights, A new look at an old problem: Why do so many poor children miss out on essential immunization?’.

71 Chandir, et al. (2009), ‘Effect of Food Coupon Incentives on Timely Completion of DPT Immunization in Children from a Low-income area in Karachi, Pakistan: A longitudinal intervention study’.

72 Loevinsohn and Loevinsohn (1986), ‘Improvement in coverage of primary health care in a developing country through use of food incentives’.

73 ‘Alma Sana Vaccine Reminder Bracelets for Moms’, <www.indiegogo.com/projects/alma-sana-vaccine-reminder-bracelets-for-moms>

74 Bangure, et al. (2015), ‘Effectiveness of Short Message Services reminder on Childhood Immunization Programme in Kadoma, Zimbabwe: A randomized controlled trial’.

75 McCaul and Johnson (2002), ‘The Effects of Framing and Action Instructions on Whether Older Adults Obtain Influenza Shots’.

Solution examples

Change how choices are structured

Ways of structuring choices can have a powerful influence on an individual's decision-making. The same information presented in different ways can result in different outcomes. Thoughtfully designing how choices are presented can shape the decisions that are made.

Consider the following three methods of structuring choices: Defaults, presumptive language and enhanced active choices.

In each of these three instances, caregivers maintain the ability to decline services; however, most people tend to **stick with options that are presented favourably or as the default**. The deliberate structuring of choices can encourage desired behaviours among users in ways that affirm their **inclination to do what is easier and beneficial**.

Defaults

Defaults capitalize on our tendency to stick with the status quo, or 'go with the flow'. We are usually **content to continue with the option that we are automatically given**, and are much less likely to actively change a decision that is suggested for us, especially if suggested by a perceived authority figure or someone whom we trust.

One study on influenza vaccinations found that people

pre-scheduled for an influenza shot were far more likely to get vaccinated than those who had to make an appointment on their own. (In the former group, people could opt out of the appointment; in the latter, people were forced to opt-in by making an appointment independently.) The study found a 36 per cent relative increase for the pre-scheduled group.⁷⁶

Presumptive language

Presumptive language refers to the way in which a conversation is started during a provider-patient interaction: The provider presumes the recommendation will be acceptable instead of discussing why it is recommended.

In one study, paediatric providers either used **presumptive** or **participatory** language with parents. The presumptive language (e.g. "Well, we have to do some shots") significantly outperformed participatory language (e.g. "What do you want to do about shots?") among all parents, even vaccine-hesitant ones. When the provider

used participatory language, 89 per cent of the vaccine-hesitant parents resisted compared with 30 per cent when the provider used presumptive language.⁷⁷

Enhanced active choices

Enhanced active choices ask people to make a deliberate choice between multiple options presented to them. **The preferred choice is framed in positive, encouraging language and the undesirable choice in dissuasive language.**

In another series of influenza vaccination experiments, researchers structured choices so one group "had to actively select whether they would get an influenza shot to reduce their risk of contracting influenza, or would choose to not get an influenza shot, even if it meant increasing their risk."⁷⁸ Seventy-five per cent of this group said that they would get the shot, compared with 42 per cent of a control group that saw a standard message⁷⁹ about the shot.⁸⁰

⁷⁶ Chapman, et al' (2010), 'Opting In vs. Opting Out of Influenza Vaccination'.

⁷⁷ Opel, et al. (2013), 'The Architecture of Provider-Patient Vaccine Discussions at Health Supervision Visits'.

⁷⁸ Participants facing an enhanced active choice were asked to check one of two boxes: "I will get an influenza shot this fall to reduce my risk of getting the influenza and I want to save US\$50" or "I will not get an influenza shot this fall even if it means I may increase my risk of getting the influenza and I don't want to save \$50."

⁷⁹ The standard message read: "Place a check in the box if you will get an influenza shot this fall."

⁸⁰ Keller, et al. (2011), 'Enhanced Active Choice: A new method to promote behaviour change'.

Make follow through concrete

Follow through ideas help to convert positive intentions into corresponding actions. Sometimes, decisions are easier to translate into actions when the actions feel concrete and achievable. Other times, creating a deal with your future self can increase the likelihood of action.

Making a decision and following through takes effort, which we can always put off until tomorrow, again and again. **Follow through helps us to overcome our inclination to delay, forget or ignore our positive intentions**—whether by making plans concrete, or by incurring a cost or relinquishing a reward.

Implementation intentions

Follow through can be increased by implementation intentions — for instance, by asking patients or caregivers to describe or write down in detail their plan to vaccinate.⁸¹ These plans ask users to specify when, where and how to carry out an action, forcing the present self to prepare the future self to follow through. Rather than relying on open-ended intentions ("I want to get my child immunized"), implementation intentions prompt users to link that positive intention to a plan for action.

In one study of workplace vaccination, employees that received a postcard about available workplace influenza shots were more likely to vaccinate if they were prompted to write down when they planned to come for the vaccination. Moreover, when they were prompted to write down both a date and a time, vaccination rates were even higher.⁸²

Commitment devices

Follow through can also be deployed through commitment devices, which help bind users to a future action; for example, by adding a penalty if they do not follow through.⁸³ This approach helps lock in an action that the future self takes based on a decision made in the present.

In one study, grocery store shoppers were asked to commit in advance to buying healthier foods. They received a discount if they increased their healthy purchases by a specified percentage, and agreed to relinquish the savings

if they did not meet the threshold. The shoppers who made a binding agreement increased their healthy food spending relative to a control group.⁸⁴

As some researchers observed, if applied to immunization, a parent "could be asked to pre-commit to approving the scheduled vaccines for the child and to put down a deposit that would only be returned (perhaps with a bonus) once the vaccine had been administered."⁸⁵

⁸¹ Gollwitzer and Sheeran (2006), 'Implementation Intentions and Goal Achievement: A meta-analysis of effects and processes'.

⁸² Milkman, et al. (2011), 'Using Implementation Intentions Prompts to Enhance Influenza Vaccination Rates'.

⁸³ Rogers, et al. (2014), 'Commitment Devices: Using initiatives to change behaviour'.

⁸⁴ Schwartz, et al. (2014), 'Healthier by Precommitment'.

⁸⁵ Betsch, et al. (2015), 'Using Behavioural Insights to Increase Vaccination Policy Effectiveness'.

Solution examples

Create feedback loops for HCWs

Systems of regular feedback can help encourage positive behaviours and discourage negative ones. Establishing feedback systems between the community and HCWs, or among HCWs themselves, can serve as powerful performance motivators.

Community feedback strengthens local relationships by giving users a voice and a stake in the success of a programme, fostering mutual accountability between users and HCWs. Peer feedback leverages social pressure by reminding those delivering care of their professional responsibilities and building their self-esteem. **These strategies place a premium on dialogue—moving health services from a technical transaction to part of a mutual effort towards a common goal.**

Community feedback

Community feedback creates mechanisms for dialogue between service providers and the people they serve—and can go well beyond the transaction at the point of service.

In one study in Uganda, researchers established a “community monitoring scheme.” Service providers and community members met regularly to discuss how to improve services and created a shared action plan. A year later, health facilities in these villages were 36 per cent more likely to have suggestion boxes and 20 per cent more likely to have numbered waiting cards; waiting times decreased on average by 12 minutes, absenteeism decreased by 13 per cent and the facilities were cleaner. Overall immunization rates increased for all age groups, though especially among newborns.^{86, 87}

Peer feedback

Peer feedback has proved to be an effective means of improving the quality of care administered by HCWs. Studies have shown that simply reminding HCWs of the social expectations of their performance can make a positive difference.⁸⁸

A study in urban United Republic of Tanzania showed that clinicians increased their performance when a visiting peer recited a short ‘encouragement script’ and mentioned five specific and important protocol items (which most clinicians knew but did not regularly perform). There were no additional changes to the incentive structure for clinicians (i.e. no pay-for-performance schemes or rewards were introduced), and yet the researchers found a “large increase in quality with a simple and seemingly inconsequential intervention.”⁸⁹

Offer incentives to HCWs

Rewards are an age-old mechanism to modify behaviour. While salary increases and opportunities for career advancement can be instrumental to improving HCW performance, so too can public recognition, symbolic affirmations of social status and feelings of reciprocity.

While non-financial rewards will not substitute as solutions to more fundamental problems, like inconsistent or inadequate salary disbursements, **examples show that ideas like reciprocity and recognition can be implemented in ways that move HCW motivation and performance in a positive direction.**

Public recognition

In a field experiment in Zambia, four groups of hairstylists were recruited to sell female condoms. One group received no additional reward beyond the proceeds of sales, two additional groups received financial rewards (90 per cent and 10 per cent margins on sales, respectively) and a final group received symbolic social

rewards in the form of stars stamped on a publicly displayed chart to represent each sale. After one year, members of the ‘star treatment’ group had sold twice as many condoms, on average, as any other group.⁹⁰ Public recognition proved far more powerful than financial incentives in driving performance.

Non-financial gifts

Recognizing HCWs with small, non-financial gifts can likewise improve outcomes. An experiment in the United Republic of Tanzania promised a biographical book about a doctor to HCWs at a future date; it was also inscribed with a thank you message from the research team. The gift “triggered an immediate response at the

time of the promise.” After 10 weeks, adherence to protocol remained consistently high.⁹¹ Small material rewards can work to trigger reciprocity; a social behaviour by which we respond to another’s action with an equal, and sometimes more significant, action.

Non-financial rewards can be particularly appealing given that they cost so little to implement. As the World Bank noted, “[social] rewards are free to give and carry no immediate material benefits but have a substantial effect on productivity and may play a key role in sustaining... effort over time.”⁹²

⁸⁶ Bjorkman, et al. (2009), ‘Power to the People: Evidence from a randomized field experiment on community-based monitoring in Uganda’.

⁸⁷ Specifically, 46 per cent and 42 per cent more newborns received the first doses of bacille Calmette-Guerin and polio vaccines, respectively, compared with the control group.

⁸⁸ Jamtvedt, et al. (2007), ‘Audit and Feedback: Effects on professional practice and health care outcomes (Review)’.

⁸⁹ Brock, et al. (2012), ‘Generosity Norms and Intrinsic Motivation in Health Care Provision: Evidence from the laboratory and the field’.

⁹⁰ Ashraf, et al. (2014), ‘No Margin, No Mission? A field experiment on incentives for public service delivery’.

⁹¹ World Bank (2015), *Mind, Society and Behaviour*.

⁹² Ibid.

Solution examples

Redesign objects

Small details in the design of objects, such as a user's home immunization records, can have an outsized impact on an object's intended function. Attributes like physical design, content and the way information is presented can all affect whether an object serves its purpose.

When modifying objects such as a home-based record, small changes can yield large transformations.

We can modify the materials (making records more durable with water-resistant paper) as well as modify the appearance (ensuring that the record is prized and visible in the home and not damaged or discarded unintentionally). Considering how an object will emotionally impact a user—such as motivating a sense of pride—is as important as the form of the object.

Consider, for example, proposals by designers to change the standard home-based record in an effort to increase immunization coverage.⁹³ A home-based record—as the name might suggest—should be designed for the home, not just a clinical environment.

In the home the most critical role of the record is to indicate when the child needs to return for a follow-up visit. The record may, however, be put away for safe-keeping, reducing it to a static record rather than a present reminder for action. Conversely, the record may be kept out and be subject to general wear and tear or unintentional misuse.

In response, improved designs featured modifications including:

Prompts

The principal design form features a yellow sleeve inside which records are kept. Each time a HCW writes the date of the next visit and inserts the record into the sleeve, the date sticks out visibly from the sleeve for the family to see.

Materials

The record is used by HCWs and put into a sleeve that is printed on Tyvek—a low-cost paper that is resistant to wear and moisture.

Images

A HCW takes a photo of the immunized child and displays it on the sleeve's cover, transforming the record into a keepsake. This ensures the record's continued visibility and motivates the family to keep the record out of harm's way.

Visuals design

The visual design emulates a government document, like a passport, to make certain it is kept safe and not discarded.

Appeal to the health-seeking identity

Identity is fundamental to behaviour. Individuals have more than a single identity: A woman can be a mother, daughter, wife, head of a business, community activist and member of a particular clan within a particular ethnic group—all at the same time. While identities co-exist, some become more influential than others—or more salient—in different contexts.

Health communications have sometimes sought to appeal to caregivers' identities as key members of a community with messages emphasizing shared responsibility. Activating certain identities—making them more salient in a given situation—can influence behavioural outcomes. Appealing to certain identities not only requires isolating the identity most likely to yield a corresponding desired behaviour, but also requires using an effective cue. In other words, how would we make salient, for example, a woman's identity as a responsible member of a community?

In a series of randomized experiments, researchers used different linguistic phrases to evaluate which yielded stronger voter turnout. Researchers

embedded linguistic cues within a survey delivered to participants, and found that cues phrased as a noun ("be a voter") led to higher voter turnout than those phrased as a verb ("go vote"). By framing voting as **an issue of identity rather than simply as a behaviour**, the distinction in phrasing resulted in an 11 per cent difference in actual turnout.⁹⁴

Nouns tend to do a much better job of priming identities and prompting desired behaviours than verbs. That is principally because "[v]erbs are harder to remember, more broadly defined, more prone to be altered in meaning when conflict of meaning occurs [and] less stable in translation between languages... than nouns."⁹⁵ For example, a message could encourage a parent

to "be a protector" by getting her child immunized, rather than instruct her to "protect your child."

Nouns help to activate particular identities, subtly tapping into a person's sense of self.

93 <<https://www.gatesfoundation.org/What-We-Do/Global-Development/Vaccine-Delivery/Records-for-Life>>

94 Bryan, et al. (2011), 'Motivating Voter Turnout by Invoking the Self'.

95 Gentner, Dedre (1981), 'Some Interesting Differences Between Verbs and Nouns.'

4b

Design quick examples

The process of design forces us to think in concrete terms about how an idea would work. For each of the candidate ideas that made it through your ‘assess concepts’ step, consider how the idea might be made more real.

This step includes the entire team — everyone is creative. Ideas can be designed quickly, easily and cheaply by anyone with basic materials. Remember, design is not about perfection. Design is about making ideas concrete enough to gather feedback from the field during prototyping.

Create the sample that best illustrates the idea. For a radio spot, a draft script would be helpful; if the idea involves an SMS reminder, a storyboard could lay out how sequential SMS messages lead to a clinic visit; an idea related to a new clinic intake experience could be visualized as a diagram.

Where possible, consider creating multiple designs of the same idea. Sometimes, users may be reluctant to give feedback when only a single design is presented. However, having multiple options may help to open up conversation, as well as allow you to compare key variables of an idea.

Keeping designs low-fidelity (or simple) will allow your team to explore many different ideas without feeling committed to any single one too early. While you should aim to design each idea, it is equally important not to over-design. A design is just a physical approximation of your idea. It may be tempting to give a certain idea more love and attention than others—to dedicate more effort to a certain design. Hard as it may be, refrain from investing too much in any one idea at this stage.

Common categories of idea designs:

Visualizations

Visualizing an idea involves putting pen to paper. What does an idea look like? How does it work? Visualizing is the most direct way to move from an abstract to a concrete idea. Ideas that would likely be two-dimensional in reality—from a sticker to a poster—are best visualized.



Models

Physical models of an idea go beyond two-dimensional visualizations, offering a way to understand certain ideas more concretely. Ideas that would likely be three-dimensional once produced—from a micro-incentive to a reminder bracelet—are best to design with models.

Sequences

Some ideas will not require making anything, but instead require changing an experience. These ideas still deserve to be designed. Ideas that are based on sequential steps—from a radio spot to a service delivery change—are best demonstrated in sequences. Tools like storyboarding can help to elucidate how a new experience might unfold.

Role-play

Some ideas are an action or interpersonal interaction—from a song to a conversation between caregivers and HCWs. These ideas benefit from role-play that asks team or community members to “try on” new actions and provide feedback on the changed situation. Pair with simple props to make the experience as realistic as possible.

Design examples

Visualization example: Personal pledge

An idea like a personal pledge is intended to help users follow through on their intentions—a specific plan a user makes to carry out an action. Visualizing this idea could require sketching out the different elements of a pledge card; perhaps a piece of paper with sections about what a user is pledging to do, when and how.

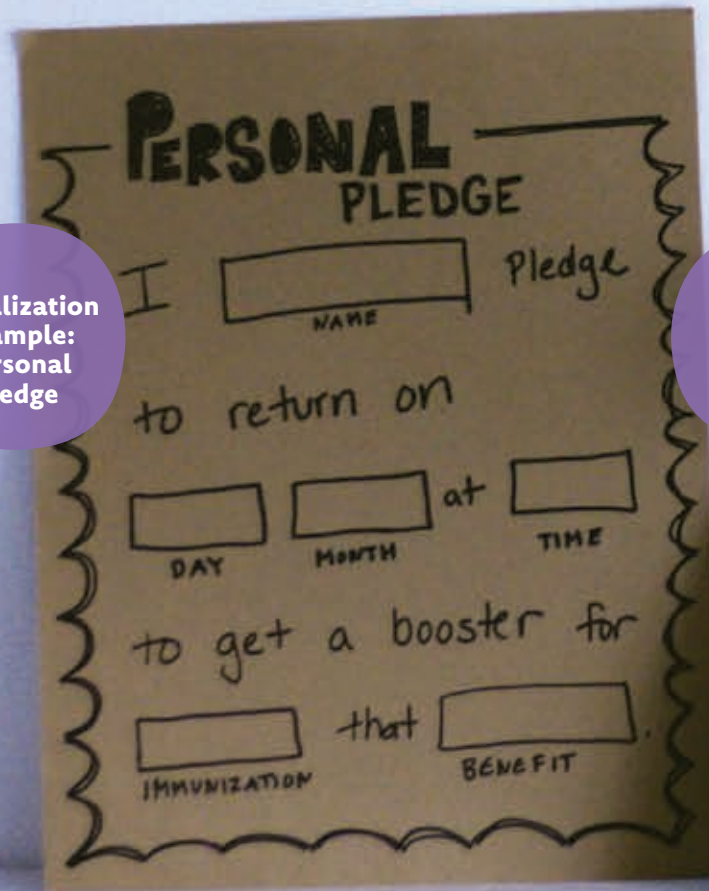
Model example: Health card

An idea to reorganize the information on users' health cards might be sufficiently communicated through a visualization. But perhaps the idea goes beyond health card information to include new aspects like a plastic cover and a string to hang it inside the home. Rather than leave these to the imagination, use rough materials to further bring the idea to life.

Sequence example: Clinic experience

An idea to redesign elements of a clinic experience for users is hard to capture with just words. Instead, a storyboard of events—from the beginning of a user's experience to the end—helps to communicate the idea more fully. It also makes clear to others what exactly needs to change, at what point and involving whom.

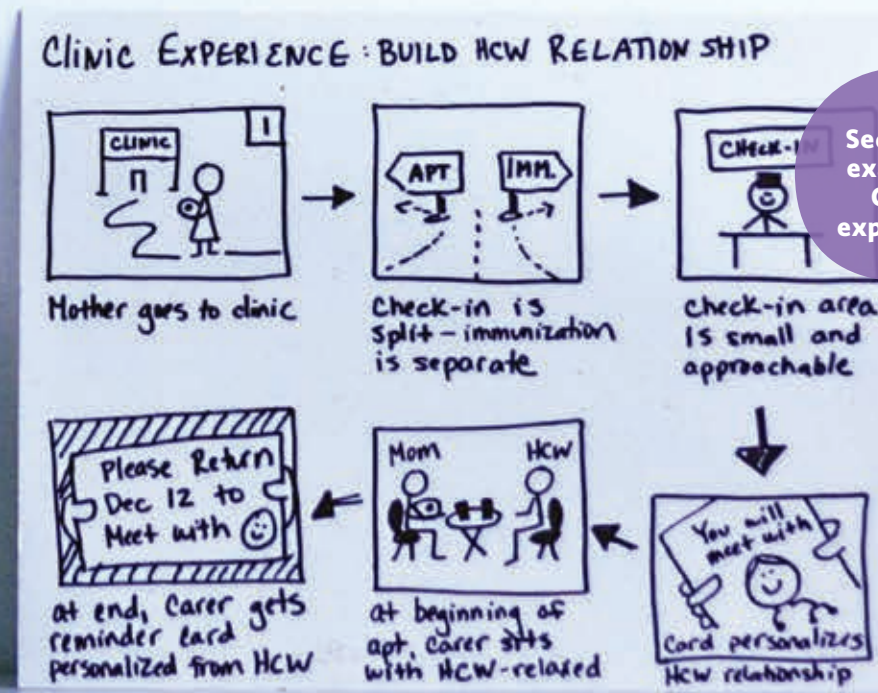
Visualization example:
Personal pledge



Model example:
Health card



Sequence example:
Clinic experience



For additional design examples, view The Gates Foundation's 'Records for Life' contest: [gatesfoundation.org/What-We-Do/Global-Development/Vaccine-Delivery/Records-for-Life](https://www.gatesfoundation.org/What-We-Do/Global-Development/Vaccine-Delivery/Records-for-Life)

4c

Prototype designs with users

Prototyping is the exercise of testing low-fidelity designs with real users. This method allows users to experience and react to simulated solutions within their environment (the home, the clinic and the community).

The purpose is not to rigorously measure performance (that comes later). Instead, we are interested in determining elements of an idea that are working well and elements that require rethinking. This step precedes full-scale implementation to optimize ideas prior to investing resources in their roll-out.

By the end of this phase, your team will have a final set of ideas that have been tested, reassessed and redesigned.



Investigating the challenge, again

In creating prototypes that users can interact with, we have the opportunity to not only examine the strengths and weaknesses of our ideas, but also to further examine our conclusions about the challenges. Putting solutions in context further confirms or challenges our initial diagnoses.

For example, perhaps we concluded that users were not completing a full immunization course because of the length and cost of travel. Existing quantitative data showed that clinic transport costs require a significant portion of monthly income, and narrative data from users confirmed that caregivers' perceptions of costs matched this reality; many told us that transport costs were just too high. In response, we designed a voucher programme to cover costs and incentivize follow through.

To prototype our idea, we set up a mini-version of the voucher programme. We distributed our low-fidelity vouchers to groups of new mothers. We then tracked voucher collection at a local clinic and found that few mothers used them. In our follow-up interviews, we asked why they were not used and found that costs are indeed perceived as high; but that is not the only problem. Many mothers

shared a common negative experience: The last time they went to the clinic, it had run out of the vaccine. Taking another day off work and paying transport costs again when the availability of vaccine is uncertain was an additional challenge, and a different diagnosis.

Prototype tools

Successful prototyping is predicated on successful planning and evaluation: Defining when, where and with whom to prototype each idea; selecting the prototyping activities to assign for each idea; recording key lessons as they emerge during and after prototyping exercises; and articulating and refining your evaluations of each idea's performance in the field.

The tools in this section—'prototype planning' and 'prototype evaluation' worksheets—are intended to assist you and your team when planning and evaluating the prototyping of your various designs. Each idea requires its own set of prototype worksheets.

The prototype worksheets help you and your team make decisions about which ideas to improve and, subsequently, which ideas to implement.

Prototype principles

01

Establish learning goals

Each design should have a clear goal or set of goals for testing (prototyping). While prototyping will likely uncover unexpected findings about the strengths and weaknesses of an idea, an overall learning goal should help to guide in-field exercises.

For example, if you are prototyping a voucher programme, your primary concern could be whether or not the vouchers are actually used. Prototyping exercises, such as a mini-pilot combined with post-pilot interviews, should be about learning whether vouchers are leading to clinic visits, and why or why not.

For each design ask yourself: What do we want to learn from putting this idea out into the field?

02

Enable real use-cases

As much as possible, prototyping exercises should be designed to simulate real use-cases. This allows us to observe people's responses and behaviours—a more reliable predictor of an idea's efficacy than self-reported data (asking users their opinion on a solution).

For example, if you are prototyping a redesigned health card, your primary

concern might be to ascertain whether it facilitates timely return visits to the clinic. Simply handing a redesigned card to a person on the street and asking for feedback will not usually yield data in service of that learning goal.

If a mini-pilot is not feasible, you can take a 'rapid prototyping' approach: Ask users to perform or act-out tasks in a simulated setting. For example, to evaluate the challenge of poor comprehension, distribute cards to users and ask them how they would explain, to a friend, how to use the card. The data will be an imperfect but helpful indicator of the new card's ability to facilitate return visits.

For each prototyping exercise ask yourself: How can we quickly create the idea in context with real users?



03

Iterate as you go

As your prototyping exercises unfold in the field, making small, iterative changes as you go is one of the surest ways to gain deeper insights.

For example, if during an exercise you learn about a shortcoming, improving the design prior to the next exercise will help you learn more. Did the design change yield new feedback from users? Iterating as you go is especially valuable when certain elements are distracting from the core idea. If a particular color is throwing users off, it may prevent you from getting deeper feedback. It is best to correct this early on.

After each prototyping exercise ask yourself: What could we adjust prior to the next test?

04

Filter feedback

Not all feedback has equal value. Key to processing feedback after prototyping exercises is filtering the helpful from the unhelpful. Often, unhelpful feedback is generated in response to low-fidelity designs—feedback from users that touches on the low quality of a particular solution.

In other instances, users may express stated preferences that do not align with observed behaviour. For example, some users say they prefer cash over food as a reward for getting their child immunized; however, your prototyping shows little difference in the impact of the financial versus the non-financial reward.

After prototyping ask yourself: How much weight should be given to each piece of feedback?

05

Invite user co-creation

The best form of feedback can come in the form of direct contributions from users.

Often, users will have questions about the solution you are introducing. Suppose you are prototyping a public recognition scheme to motivate HCW performance. A HCW asks you if this recognition is only among her HCW peers or among the wider community. Rather than provide an answer invite her to share an opinion: Should it only be among peers or among the wider community? What would that look like?

Throughout prototyping ask yourself: Where are there opportunities to directly involve users in developing an idea?

Prototype activities

Prototype activities, as suggested in the 'prototype principles', should get as close to a real scenario as possible. The more similar to a real use-case we can get, the more valuable our learnings will be.

However, prototyping should also be rapid, allowing us to learn and improve our ideas quickly. Finding a balance between polishing enough for real-world users to understand the idea and working rapidly is important. Approaches that require too much investment are less desirable than ones that can be executed quickly.

To illustrate prototyping activities that are both in context and rapid, here is an example using the personal pledge from 'design quick examples'.

Example: Personal pledge

Diagnosis:

An intention-action gap was observed during user research. We found that forgetfulness⁹⁶ causes users with an intention to vaccinate not to do so (or not to do so on time).

Prompt:

How might we help mothers to concretely establish a plan of action?

Prototype:

We designed a personal pledge using a piece of laminated paper that asks a user to articulate **what** she is pledging to do (get her child fully vaccinated), **when** she is planning to undertake certain actions (the dates, times and location

of future clinic visits) and **how** she plans to make those actions happen (for example, her exact transport plans).

Learning goals:

- Does the prototype help users to follow through on an existing intention to get their children fully vaccinated on time?
- Is the pledge easily administered by HCWs and easily comprehended by users?

Prototype activity:

We find a local clinic to partner with, and ask them to include a pledge with all discharged newborns over a one month period. We track this cohort over the next three months to see if follow-up improves, using HCW records and interviews with both HCWs and caregivers to measure changes.

Interpreting the results:

Nothing about prototyping is or should be rigorous by usual standards. However, what it should enable us to do is identify some initial strengths and weaknesses for the purpose of developing the idea further.

For example, if most mothers return for their next appointment late, we know that we have more work to do, prompting us to investigate why (e.g. through more follow-up interviews). If some mothers return on time, we will not be able to veritably attribute it to our idea; however, we might get valuable feedback when interviewing mothers who return on time versus those who return late or not at all. We might also learn that HCWs do not administer the pledge as we had anticipated, causing complications that we can address in our next iteration.



Location

Choose a location and communicate the process to administration for support.



Partners

Find HCWs or partners that will help administer the prototype. Conduct a short training on what you would like them to do.



Users

Ensure that the desired user group(s) participate.



Team

Station a team member on site throughout the day in case questions emerge or unexpected challenges arise.



Measurement

Create a simple tracking system to measure outcomes.



Follow-up

To evaluate ease of use, directly observe the activity and conduct follow-up interviews with users.

⁹⁶ Issues with memory are now widely studied phenomena; for a helpful survey on "how and why memory can get us into trouble," see: Schacter (1999), *The Seven Sins of Memory: Insights from Psychology and Cognitive Neuroscience*.

Prototype planning

For each idea, use this worksheet to develop a prototype plan in preparation for gathering in-field feedback.



Learning goals

What do we want to learn from field-testing this idea?



Demonstrate the idea

How will you simulate the idea? Examples include: Paper sketch, cardboard sign, SMS text(s), radio spot script and HCW script.



Where

Select the precise location(s) where you will introduce the prototype, such as a group of clinics. Remember that the more an idea is tested in context, the better.

When

Decide upon precise times, such as when a prototyping activity begins and when interviews will be conducted. Include the duration—hours or days—for the activity.

With whom

Confirm that you are engaging the intended user group as defined in your objective. Remember that selecting a variety of people—both supporters and skeptics—can generate more helpful feedback.

Prototype evaluation

Use these three dimensions, that focus on an idea's potential, to evaluate the prototype after in-field testing.

Desirability

Desirability is the evaluation of an idea from the perspective of intended users. It helps fit our ideas to actual people. **Consider whether an idea is asking a little or a lot of users' time and energy, whether or not it is easy to process or engage with and whether or not it is being correctly used.** Focusing on elements such as these (burden, comprehension and use) ensures that ideas are being designed for the user.

Feasibility

Feasibility is the evaluation of an idea **in the context of your programme's organizational and technical capacities.** It requires identifying the range of capabilities necessary for effectively executing an idea and sustaining it over time. Imagine what might be needed to implement, distribute and sustain an idea. If moving from a prototype to full-scale implementation seems difficult because of programmatic limitations, this means you have challenges of feasibility.

Viability

Viability is about evaluating the **financial resources required to sustain an idea.** Consider whether or not an idea has a sufficient initial programmatic budget for implementation and whether possible savings will help to make the case for sustaining and scaling the idea over time. Low-cost ideas, or ideas that save programmes money over time, are often the most viable.

Do the user responsibilities seem realistic? Why or why not?

Is this idea desirable?

- Is this idea currently designed to ask as little of users as possible?
- Does the idea easily fit into people's lives?
- Is the idea actually appealing to users?
- Is the idea understood and correctly used?
- Is it inviting or complicated?

Not yet? Return to the design phase and refine. All yes? Move on!

Biggest strengths

Is this idea feasible?

- Is the technology required of the idea easily available?
- Can your programme actually make the idea happen?
- Will the idea take a long time to move beyond a prototype?
- Do distribution channels exist and are they easily sustained over time?

Not yet? Return to the design phase and refine. All yes? Move on!

Observed weaknesses

Is this idea viable?

- Is the idea affordable?
- Is operating the idea sustainable?
- Might the idea actually save the programme money in the near-term?
- Does the idea offer potential savings in the long-term?
- Do efficiencies exist between this idea and other active programmes?

Not yet? Return to the design phase and refine. All yes? Move on!

What do we still need to know?

How could we improve?

Introduction: Continuous learning

We established what we want to achieve, investigated what might be preventing our desired outcomes and generated potential solutions to those challenges. Now it is time to scale and implement our ideas.

How can we continually improve our ideas throughout their implementation?

Improving health programmes requires a continual process of discovery, experimentation and learning. Many variables shape the success of a programme; some may be identified before implementing new ideas, but some will be identified during implementation. This calls for iteration.

Implementation is an opportunity for further learning and improvement. While disappointing, it is possible (and even likely) that our initial diagnoses were incorrect or partially correct, and that our evaluations of prototyping were insufficient. Only by scaling and implementing our ideas can we see what does and what does not work in the real world.



Iterative implementation

One way to think about methods of iterative implementation is ongoing user research. This implies that we always have more to learn and more to improve upon. These methods promote the concept of phasing: Rather than approach implementation as a one-time task, it advocates phased steps to implementing an idea. This cyclical approach to planning, assessing strengths, identifying weaknesses and making adjustments before scaling a programme initiative (and repeating that process) gives us the opportunity to properly iterate.

For many programmes, this principle—that implementation is iterative—will be easier in theory than in practice. Those who fund programmes are often not interested in imperfect results, and those who execute programmes are sometimes wary of acknowledging them. By candidly recognizing that implementation will reveal both shortcomings and opportunities for our ideas, programmes can work to improve initiatives over time, increasing impact and decreasing waste.

Iterative implementation requires that programmes consider behaviours that will either facilitate or handicap the ability to adapt ideas over time. Consider the following three ways in which programmes can set themselves up to embrace adaptation.

Resources for adaptation

Plan to budget resources—time, money and effort—for the explicit purpose of learning and making changes throughout implementation.

Resources tend to be tied to particular, pre-decided activities, and also tend to stay static. This can prove challenging. If an idea calls for introducing new clinic procedures, implementation might require creating and deploying new materials or conducting HCW trainings on how to use the materials. In the course of implementing, changes to our planned activities, or additional activities, may become necessary.

Ensure up front that budgets enable adaptation of planned efforts in the field. This allows teams to respond to the realities of implementation.

Permission for adaptation

Do not avoid change simply because an initial investment in the idea has been made. Too often, programmes feel compelled to continue a project despite evidence of ineffectiveness or identification of new opportunities for improvement.

This may come from a fear that if a project is put on hold, or a part must be redesigned, it will appear that the programme has wasted resources.⁹⁷ If we let ineffectiveness continue, we waste even more resources. This tendency is prevalent when we have already invested a lot of time, energy and money, and therefore do not feel we have permission to adapt.

Iterative implementation calls for giving programmes permission to honestly evaluate, adjust and improve ideas throughout their execution.

⁹⁷ Arkes and Blumer (1985), 'The Psychology of Sunk Cost'.

Standards for adaptation

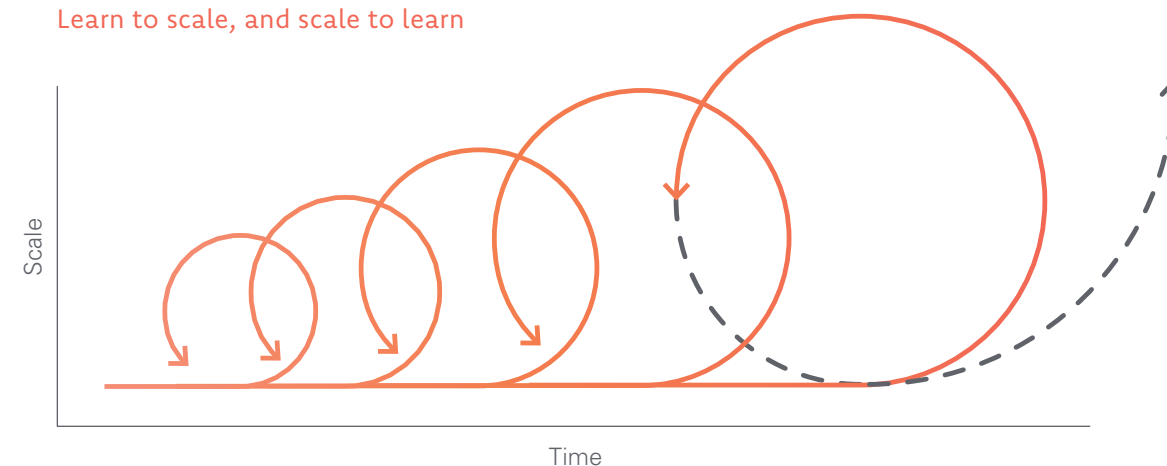
Iterative implementation is dependent upon knowing what to measure, which standards to apply and exactly what should be improved.

Indicators are tools; some are helpful for certain tasks and some are not. Selecting the appropriate indicators for the purpose of measuring and adapting ideas over time is often a tension between indicators that will help us make effective adaptations, and ones that will please a programme's stakeholders. They are not always the same.

The methodology that follows is dedicated to selecting the most useful techniques to evaluate ideas and support their continual improvement.

Phasing model:

Learn to scale, and scale to learn



5 Methodology

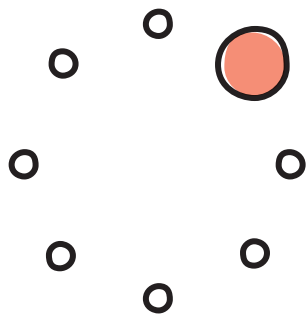
The approach is divided into three steps that repeat. At the end, we return to our initial implementation planning and make adjustments prior to repeating the process and further scaling the idea.

5a: Plan for iteration

 **Time required: Days**
Team: Pairs (subset of core team)

Devise an 'adaptation plan' for each draft initiative. Define the key evaluative questions, possible risks, measurable criteria and corresponding indicators to track progress over time. We will return to the 'adaptation plan' after each phase of implementation and make adjustments.

 **Adaptation plan**



5b: Evaluate effectiveness

 **Time required: Days or weeks**
Team: Core team of 3-5

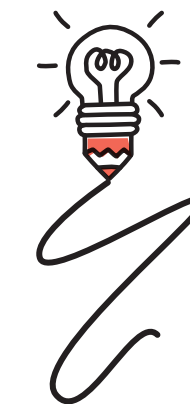
Assess each revised idea in the field using the 'adaptation plan' as a guide. Evaluate the accuracy of diagnoses and determine what we still need to learn.



5c: Improve initiatives

 **Time: More than a few weeks**
Team: Additional participants
(community leaders, health workers, colleagues, NGOs and government partners)

Revisit the initial 'adaptation plan' to reflect what we are learning, adjust what we are measuring and continue to improve the execution of our ideas. Implement adaptive changes that respond to feedback and experiences as you scale the improved idea.



Final output: Revised adaptation plan and proven ideas

If the idea is working, the final output is a revised 'adaptation plan' and proven ideas that can be scaled. If the idea is not working, step back into the conceptualizing and design exercises from Question 4, then redeploy.



5a

Plan for iteration

Adaptation plan: Making ideas better

What do we hope to learn during programme implementation? What are we going to measure? How will we measure it?

An ‘adaptation plan’ contains questions that we will return to during the iterative implementation of our ideas. These questions determine what we learn and what we change.

Adaptation plans are living documents. They change from phase to phase as we identify unforeseen obstacles to success and change what we choose to measure.

Separate plans for separate ideas

Each initiative requires its own iterative implementation process. For every prototyped idea your team should devise an adaptation plan, evaluate the idea’s performance in the field and make adjustments prior to scaling it further.

While some ideas may be implemented together (for example, perhaps you plan to introduce both new health cards and a new intake process at neonatal clinics), devising separate planning, evaluation and improvement processes ensures that each idea gets the attention it deserves.

Components of an adaptation plan

i

Questions

What are we hoping to learn?

Choosing what to measure is predicated on what we want to learn.

Suppose we are implementing an SMS reminder programme that responds to user research indicating forgetfulness as a chief reason for under-immunization. We want to know whether or not reminders actually increase coverage—articulated in our objective statement (Question 1). However, that will require long-term tracking. For the adaptation plan, we are only concerned with what we can learn about and improve during iterative implementation.

To learn whether reminders help decrease forgetfulness we could ask: **Does the SMS reminder programme make it easier for caregivers to follow through on their intentions to vaccinate?**

We might also evaluate details of the programme such as the frequency and the timing of reminder messages.

To generate valuable questions, first return to the diagnosis behind the idea. In the short-term, it is more realistic to evaluate whether an idea is effectively responding to its diagnosis than to evaluate overall impact. Second, consider elements of the idea that would improve its performance (in this case, perhaps the volume or timing of messages).

ii

Indicators

What are we going to measure?

Now that we know what we want to learn, we can determine how we want to measure progress towards our learning goals. We choose indicators that can be reliably followed over time, and that reveal how an idea is working as indicated by change or stagnation.

To continue our example, if we want to know whether SMS reminders make it easier for caregivers to follow through on their positive intentions, an increase in clinic visits is a strong indication that the idea is working. Therefore, we could select “per cent change in clinic visits” as a corresponding indicator.

We could also select more than one indicator to help answer a question. Having multiple indicators gives us multiple perspectives on the same question.

iii

Verification

How are we going to measure?

Now that we established what we are measuring, we need to devise how to measure. What methods will we employ to track the indicators we laid out?

There are many ways to measure the effectiveness of SMS reminders to increase clinic visits. Each means of verification will have distinct pros and cons. One approach could rely on **clinics' administrative data**: Evaluating the aggregate change in visit volumes over some period of time. However, total visits could increase for various reasons, and it could prove difficult to confidently attribute our SMS reminders to this outcome.

Another approach could rely on an **individual tracking system**: Enrolling a sample of caregivers into the SMS reminder programme and tracking these caregivers throughout the duration of the programme. While this method may be more verifiable, it is also potentially more effortful to administer.

Quantitative approaches are not the only (or necessarily the best) way to gather information. The data we gather for iterative implementation do not need to be definitive; they need to be enough to inform incremental improvements. Re-engaging with **qualitative user research** is a useful verification tool. Consider the value of **follow-up interviews** with caregivers after experiencing the SMS reminder programme. In addition to the data of change in clinic

visits, we can learn about why the SMS reminders helped some caregivers and not others. As with user research (Question 3), qualitative approaches can help to uncover motivations that would not likely emerge in quantitative data.

iv

Justifications

Why are we measuring this way?

Why have we selected a particular indicator, and why have we chosen to track it in a particular way?

The justification component exists to communicate the reasoning to a broader team. Articulating justifications instigates critical reflection on our decisions to help us avoid selecting inappropriate measurements.

Justifications should be given specifically for each means of verification (you may have multiple methods for verifying a single indicator). For example, perhaps we chose to measure the percentage increase in clinic visits to see if forgetfulness is the biggest obstacle. In addition, we chose to measure changes in timeliness to see if follow-up is the biggest obstacle.

To track those indicators, our chosen means of verification is administrative data provided by participating clinics. Our justification acknowledges the attribution issues with the approach, but explains that given a short timeframe and limited budget, it is an optimal option.

External factors

Like 'recognizing assumptions' (Question 2), identifying external factors helps us design for the existing system and users, rather than for an ideal system and generalized users.

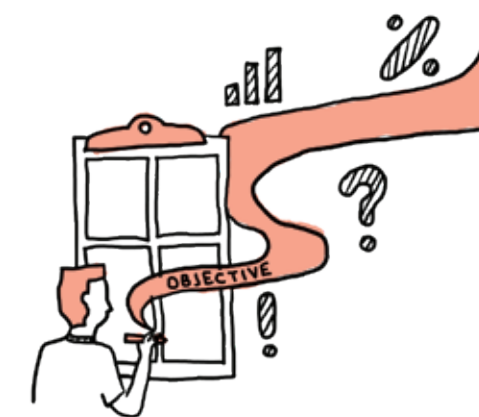
There may be much that does not go according to plan throughout implementation—some within a programme's control, and much outside of it. While effective programme management should help to account for those variables within a programme's control, identifying external factors that might jeopardize an idea is another way to adapt our ideas to be more risk-resilient.

For example, the effectiveness of an SMS reminder programme might rely on the assumption that throughout the duration of the programme, a caregiver is reliably accessing the same mobile phone. In reality, the phone may be shared within the family and therefore reminders may not reliably reach the caregiver at the right time. The idea might also require that caregivers can consistently pay for mobile service, which may not be realistic. From internet connectivity, to the performance of programme agents like HCWs, to vaccine supply itself, many external factors pose as risks to an idea's success.

Taking these risks into account is critical for three reasons. First, we must recognize possible external factors in order to address them by adapting our ideas.

Second, knowing external variables that stand in our way helps identify which measurements are reliable within the adaptation plan. It is unlikely that all risks will be taken into account up front during the development of an adaptation plan. It is more likely that key risks are discovered during implementation. This is why the adaptation plan must be live—we should be able to return to it and adjust as an idea is tested in the real world.

Third, external factors help explain why the idea did not perform the way we thought it would. Shortcomings in the SMS reminder programme that show up in the data may not indicate shortcomings within the concept itself. Instead, they might suggest that the idea's design and distribution should be better adapted to mitigate these external factors.



Adaptation plan

For each idea, use this worksheet to develop an 'adaptation plan'. Adjust the plan throughout implementation. Include one row for each implementation question and add additional rows as needed.

Remember the objective

Locate the objective from Question 1 for reference—this is what the continuous learning should support.

Identify external factors

Identify external factors that may jeopardize the idea or interfere with indicators.

Sample external factors:

- ! Caregivers may not have reliable access to the same mobile phone—it could be shared.
- ! Caregivers may not consistently pay for data.
- ! Caregivers may not have regular reception.
- ! Clinics may not regularly stock all vaccines.

i

Define implementation questions

Define what you want to learn about and improve from phase to phase during iterative implementation.

?

ii

Specify indicators

Based on your questions, specify what you need to measure.

%

iii

Determine means of verification

Determine which methods to use for tracking the indicators and improving the idea.



iv

Articulate justification

Document why each indicator and its associated means of verification were selected.



Question examples:

- ? Does the SMS reminder programme make it easier for caregivers to follow through on their intentions to vaccinate?
- ? Are more messages better than fewer?
- ? How important is timing?

Indicator examples:

- + Percentage change in clinic visits.
- + Percentage increase in on-time visits.

Method examples:

- » Use clinics' administrative data (aggregate change in visits).
- » Enroll a sample of caregivers into the SMS reminder programme trial and track this controlled set versus historical results.
- » Conduct individual exit interviews with caregivers after experiencing the SMS reminder programme.

Justification examples:

- » **Indicators:** The two indicators address two related issues (forgetfulness leading to lack of use).
- » **Verification:** Administration data from clinics, a sample trial and exit interviews are suitable means of verification given short time frame and limited budget.

5b

Evaluate effectiveness

Whereas planning happens on paper, evaluation happens in the field. This step is comprised of two sequential parts: Executing the means of verification chosen in the adaptation plan and analysing information as it is collated.

The methods used to execute the means of verification and analyse findings will vary significantly depending upon the initiatives chosen for implementation.

In addition to the tracking and analysis activities your team chooses, the following three categories will help improve an idea from one phase to the next.

External factors

The 'adaptation plan' lays out the potential external factors (risks) beyond the immediate control of your team that can jeopardize the effectiveness of an idea once implemented. For example, a reward given to a user for seeing an immunization course through will not be useful if upon the last visit, the vaccine was not available.

If you cannot resolve the external factors (e.g. vaccine supply) you must adapt ideas to be more risk-resilient. Consider the same example of a reward for a user that is not very useful if a vaccine is not in supply. After visiting a clinic twice, motivated by

the promise of a reward upon the third and last visit, a user is likely to be upset by the absence of a vaccine—and moreover, by the absence of a promised reward. Following the adaptation option, the reward system is modified; users who encounter this situation are offered an increased reward for returning for a fourth clinic visit, when the vaccine stock is scheduled to be replenished. This may not work perfectly (especially in the unpredictable context of a failing vaccine supply system); but it may improve an idea's chances of success.

It may not be possible to fully address the external factors facing an initiative. Evaluating those risks is still critical to any measurement exercise, as it helps to explain how an initiative's effectiveness will continue to be mitigated.

Incomplete diagnoses

Our user research (Question 3) did its best to identify and explain issues impacting our prioritized user group. Our diagnoses captured why these issues exist. However, no amount of research will produce definitive diagnoses. One of the benefits of iterative implementation is the opportunity to use the real world to test our findings: Are the solutions we developed actually responsive to the challenges articulated in our diagnoses? If not, what did we miss?

Consider two different scenarios; one of them reveals an incomplete diagnosis, and one of them does not.

In the first example, a box of tea is used as a non-financial reward for completing an immunization course. Our evaluations reveal that clinic visits did not meaningfully change with this new reward system in place. Through individual interviews, we learn that the reward itself is of little interest: Tea is not especially desired. This example does not point to an incomplete diagnosis, but to the shortcoming of the idea itself.

In a second scenario, tea was very much of interest to this user group: Non-users of the rewards programme discussed how much they would have liked to have received the reward. But these non-users also communicated that because of high transport costs, they still could not dependably visit the clinic, despite wanting to. In this instance, the diagnosis was incomplete: Forgetfulness is a problem, but so too are travel costs.

When we recognize evidence of incomplete diagnoses, we must refine them, adjust their corresponding prompts and revisit idea generation and design. This iterative loop ties our implementation (Question 5) back to our research outputs (Question 3) and creative efforts (Question 4).

Unknowns

Finally, one of the most important aspects of an honest evaluation is acknowledging what we still do not know.

One example of a predictable unknown is the degree to which an idea effectively supports a programme's objective. Is the idea actually increasing coverage among the user group? Is it decreasing inequities? This measurement of impact will come from rigorous evaluation over a longer time.

Our evaluations will be incomplete in many other ways. Data will be imperfect, or inconclusive—and explicitly identifying those unknowns at the end of an implementation phase will help us adjust the 'adaptation plan' for subsequent phases. For example, continuing with our hypothetical rewards programme, perhaps data from an initial phase suggest that a particular sub-segment of users (young caregivers) are using the programme less than others. At this point, we have an outstanding unknown: Why are these particular caregivers tending to use the rewards programme less?

Identifying unknowns will help to complete our measurement activities—and, subsequently, improve the ideas themselves.



5c

Improve initiatives

There are two ways that findings from ‘evaluate effectiveness’ help teams improve an initiative.

The first involves efforts to improve the idea itself. Discovering that a particular risk is impeding an idea’s potential, or that the idea is not being received by users in the way we anticipated, requires returning to concept creation and design (Question 4). Once we have a new idea, we redeploy in a new phase of implementation and re-evaluate its performance. **We can call this idea improvements.**

The second involves making adjustments to how we measure and learn. Before we continue scaling up, we should revisit the initial ‘adaptation plan’: Have we been asking the right questions? Are the indicators we chose proving helpful, or too challenging to meaningfully track? Are there other indicators we should consider? What additional risks emerged that we did not anticipate? What risks did we anticipate that had no impact? **We can call this planning improvements.**



Checking ourselves

Throughout this problem-solving process, we risk viewing ourselves as the experts and users as the people who require help. This is not the case. A human-centred methodology treats users as the ultimate experts and ourselves as learners intent on better understanding what is preventing better health outcomes. While you may be the one holding this field guide, it is unlikely that you also know the problems facing health programmes as intimately as those affected by them.

Intended users are not alone in facing the challenges presented here. **Our cognitive abilities are a relatively poor predictor of how susceptible we are to cognitive biases.**⁹⁸ Educated, high-income people are just as susceptible to forgetting important tasks or exaggerating probabilities as the less well-educated and poor. As Jim

Yong Kim, President of the World Bank, commented, “development professionals and policy makers are, like all human beings, subject to psychological biases.”⁹⁹ On the next page are three reminders to help us be self-critical of biases and assumptions we might inadvertently bring into this work.

⁹⁸ Stanovich and West (2008), ‘On the Relative Independence of Thinking Biases and Cognitive Ability.’

⁹⁹ World Bank (2015), *Mind, Society and Behaviour*.

Hearing what we want

Consider two uncontroversial observations. First, it is unlikely that health professionals approach a problem without any pre-existing experience or knowledge. Most engage with a challenge having the distinct advantage of a career's worth of expertise.

Second, it is usually easier for us to get behind familiar ideas than unfamiliar ones. Familiar information is comfortable, and we usually do our best—even if unconsciously—to avoid feeling uncomfortable.

Taken together, these two phenomena can handicap our work: **The more we know, the more uncomfortable it is to process unfamiliar information. This makes us more likely to be selective in what we hear.** From conducting field research to analysing research findings, we exhibit the tendency to fit what we see and hear into pre-existing models of how we think things work. We bypass information that goes against those mental models.¹⁰⁰

For example, consider the researcher who developed the following hypothesis: A particular user group is rejecting vaccinations because of a dearth of proper education. For years, across many contexts, this researcher observed the correlation between low levels of education around vaccines and low uptake. In the present context, the researcher takes special note of these observations: There is no discussion of vaccines in schools and little education at clinics.

The researcher may have also heard, during interviews, that vaccines are not safe. This seems to further support the researcher's hypothesis: People are not properly educated given that they think vaccines are dangerous.

But that is not the whole story. Suppose the researcher is in a country with a history of forced sterilization. Users may have reason to believe vaccines are dangerous. Rumours of sterilization may not be accurate in the present, but they are meaningful historical events.¹⁰¹ The problem is a distrust of public services rather than misconceptions about vaccines.

Had the researcher stuck with the initial hypothesis regarding under-education, the solutions developed would not be effective. By selectively emphasizing certain observations and bypassing others based on previous knowledge and experience, we risk misdiagnosis and ineffective solutions.

Having an answer

Health systems and the various ways that populations engage with them are complex. Despite that evident complexity, definitive answers are more comfortable than ambiguity. However, we do not have all the answers, and humility helps us remain open to new insights.

At their best, human-centred methods avoid overstated precision by surfacing our assumptions, questioning the perfection of any diagnosis or idea and mandating continual investigation and improvement. Being unsure is far better than being falsely confident. In any arena where practitioners are tasked with better understanding and responding to the subtle and complex elements of human behaviour, overconfidence can be debilitating. Having no answer is better than having the wrong answer.

For example, take a programme that has invested significant amounts of time, money and effort into communication assets that used positive framing to motivate caregivers: It used messages like "getting

fully vaccinated can save your child's life." Assessments during the prototyping of the communication assets were not conclusive; the initial evaluations did not strongly suggest success or failure.

Before implementation, the programme decided to additionally prototype negative messages to better compare and contrast the idea (for example: "Your children will be more likely to contract a serious disease if you don't get them fully vaccinated.") The findings did not reveal anything conclusive. So the programme brought both negative and positive messages through to implementation, piloting them over time and evaluating their potential affect on clinic visits.

Rather than defaulting to an answer for the sake of conclusivity, the programme maintained humility in its assessments and, as a consequence, opened itself up to further experimentation by bringing the negative messages into its prototyping and iterative implementation.¹⁰²

Letting ideas go

Lastly, human-centred methodologies require that practitioners embrace iteration.

In the course of the work presented in this field guide, teams will likely articulate a diagnosis, discover a finding or devise a solution that needs to be changed—or discarded altogether. **When we invest significant energy in an effort, or are especially satisfied with our work, making changes or discarding that work can prove challenging. We have a tendency to resist change.**

For example, during the prototyping of creative ideas, it is unlikely that any later ideas will bear a strong resemblance to the concepts initially developed during creative brainstorming. However, the more we hold onto our ideas as they are, the less we are able to objectively listen to users and adapt our ideas based on the valuable feedback they provide.

Resisting overcommitment opens our work to more possibilities for experimentation and effectiveness in the long run.

A human-centred approach to problem-solving accepts that our pre-existing knowledge is incomplete, that definitive answers can be dangerous and that better findings and new solutions await our discovery.

¹⁰⁰ Nickerson (1998), 'Confirmation Bias: A ubiquitous phenomenon in many guises'.

¹⁰¹ Generalized example based on empirical evidence: 'Social Mobilisation and Communication for Polio Eradication: Documentation in Nigeria, India and Pakistan (2002-2003)'.

¹⁰² Gallagher and Updegraff (2012), 'Health Message Framing Effects on Attitudes, Intentions, and Behaviour: A Meta-Analytic Review'. "As it happens, research has largely been inconclusive on framing effects as they relate to vaccination-related behaviours; loss-framed messages generally tend to perform better with health-related behaviours overall, but their strength is less certain in regards to immunization."

Additional resources

Additional components available at hcd4health.org:



Website

To download a digital version of the full 'Demand for Health Services Field Guide', or any of the additional resources, visit hcd4health.org.



Principles and process poster

This six-page, fold-out poster provides a short introduction, an overview of the process and the six guiding principles to keep in mind.



Workbook

This fold-out workbook provides an summary of each step and its tools. The form provides helpful reminders for users familiar with the process.



Digital toolkit

'Designing Digital Interventions for Lasting Impact' was created in collaboration with the Global Innovation Centre. It incorporates technology-focused considerations.

Additional resources that further explain, demonstrate or exemplify the use of human-centred design:

For examples of how UNICEF's Innovation Team is using a human-centred approach: unicef.org/innovation

Take Acumen courses in human-centred design: plusacumen.org/courses

For more information about how human-centred design is being applied across the Bureau for Global Health's work: engagehcd.com

For a tailored set of resources that clarify the potential of human-centred design for global health practitioners: designforhealth.org

For a comprehensive list of toolboxes and methods from companies, institutions and experts: toolboxtoolbox.com

For more information on interviewing users and creating a discussion guide, read Rosenfeld's *Interviewing Users*: rosenfeldmedia.com/books/interviewing-users

For an overview of human-centred design and a complete kit of methods to apply throughout the process, visit the IDEO.org Design Kit: designkit.org

View tools for collaboration and brainstorming in the HyperIsland Toolkit: toolbox.hyperisland.com

Frog's Collective Action Toolkit puts design-thinking tools into the hands of local change agents: frogdesign.com/work/frog-collective-action-toolkit

Find practical tools to trigger and support social innovation in the DIY Toolkit: diytoolkit.org

For tools focused on improving the conditions and experiences of vulnerable populations visit the Social Innovation Lab Guide: socialinnovationtoolkit.com

If you are interested in thinking about innovation at an organizational (not project or service) level, visit Capacity to Innovate: capacitytoinnovate.org

For ready-to-use workshop agendas and guidance bringing together groups, download the Social Innovation Lab Guide: rockefellerfoundation.org/report/social-innovation-lab-guide/

About this guide

This resource was created to help colleagues apply human-centred design approaches to challenges of creating demand for health services.

Background

In 2015, the SAGE Decade of Vaccines Working Group tasked UNICEF and WHO to establish a working group related to Global Vaccine Action Plan Strategic Objective 2 (GVAP SO2). This field guide builds on the findings and recommendations of the GVAP SO2 Working Group.

The SO2 findings disrupt a simple distinction between supply and demand. They push for increased Expanded Programme on Immunization capacity to understand and respond to challenges, whether they are related to caregiver KAPs, HCW skills or issues of service quality.

This resource was created by the UNICEF Programme Division, Health Section, Immunization Unit C4D team to help colleagues apply human-centred design approaches informed by emerging insights from the behavioural sciences.

The approach was developed with case material and field testing in the context of immunization service delivery, but is applicable to all health services that are trying to increase use.

Credits

This guide was authored by Grant Tudor and Benjamin Hickler. Design research and creative direction was provided by Gena Cuba. Illustration by Daniel Zender and Laura Berglund. Countless partners inside UNICEF, as well as valued outside experts, made the creation of this field guide possible.

Share feedback and ask questions

To share your successes and stories from the field, or to ask any questions you have regarding this guide, email: HCDimmunization@gmail.com.

Creative commons license: Attribution-NonCommercial 4.0 International (CC BY-NC 4.0)

You are free to:

- **Share** — Copy and redistribute the material in any medium or format.
- **Adapt** — Remix, transform and build upon the material.

Under the following terms:

- **Attribution** — You must give appropriate credit, provide a link to the license and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
- **NonCommercial** — You may not use the material for commercial purposes.
- **No additional restrictions** — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

Lexicon

Some terms used in this guide may be foreign in health programming fields, but their meaning is probably not as foreign. Terms and concepts common to human-centred design are listed below. The language is also meant to be human-centred; simple terms that can be understood outside technical jargon and specialized acronyms.

Q1: What is our objective?

Objective – The programmatic outcome set as a measurable goal (not attitudinal goal) to focus efforts throughout the process.

Obstacles – Cognitive biases/burdens of both service recipients and service providers that hinder the desired programme outcome. This includes competing priorities, demands for attention, conflicting beliefs, habitual behaviours and social pressures.

Persona (also ‘key user persona’) – A realistic combination of characteristics that together could form a single person. Used to focus research, diagnosis and solution design on the people we are trying to reach.

User – The person who will be using or interacting with our solution: The child we are trying to reach, the caregiver we are trying to serve and the health workers who deliver solutions.

Q2: What do we think we know?

Assumptions – The cognitive biases and burdens that practitioners bring from past experiences and years of expertise, requiring critical reflection to minimize the influence they have during research, diagnosis and design evaluation.

Field notes – A visualization of the notes in a common area that serves as a continuous reminder of what we know and what we still must learn — while encouraging collaboration and discussion among the core team.

User (caregiver) journey – A model to deepen your understanding of the user’s behaviours, thoughts and feelings leading up to, during and after the point of service. This can be focused on the caregiver or the HCW.

Q3: What stands in our way?

Creative prompts – Actionable questions that prepare the team to generate solutions. Prompts present the diagnosis from research as opportunities for inventive solutions.

Empathy gap – The gap between the experience of the people designing health programmes and the experience of the people using the programmes. This gap is closed through user research.

Diagnosis – The identification of the root cause of a behaviour, perception or other challenge by examination of the symptoms.

Hypothesis – Initial or proposed explanations, made on the basis of available evidence, as a starting point for further investigation.

Interviews – Discussions led by open-ended questions that invite users to share their stories and point of view.

Observational research – Observing people and their environment to compare what they say to what they do, uncovering a depth of details that may not be readily apparent and learning from varied actions and interactions of different users.

Relationship map – A visualization used to map the relationships between the personas, their needs and the people responsible for responding to their needs.

User stories – The recommended mode of sharing field research to focus the team on empathy and activation. Compared to charts and statistics, stories make the findings concrete instead of abstract and bring the context of the user with them.

Q4: How could we respond?

Brainstorming – A group activity for generating ideas collectively.

Design – The intentional creation of a solution based on inputs from users—considering the form, function, visual aesthetic and sequential order.

High-fidelity plan – A refined plan, sketch or rough drawing that serves to more closely approximate the final version of the idea.

Iteration – The willingness to revisit and rework previous conclusions in order to arrive at a better solution, also known as progressive approximation.

Low-fidelity plan – A draft plan, sketch or rough drawing that serves to quickly make an idea real.

Prototype – A sketch, sequence or blueprint that acts as the first preliminary model of an idea.

Prototyping – The act of testing an early design (prototype) with the people that are intended to use it, in the setting where it is intended to exist. May also be considered a mini-pilot.

Q5: How could we improve?

Adaptation – Like iteration, an approach to implementation that allows for continuous learning. Instead of looking for a solution to work or not, adaptation looks for ways to continually improve the idea, how it is introduced and how its impact is measured.

Adaptation plan – An implementation plan that will continually change during the implementation process to become better suited for the initiative and its changing environment.

Indicator – A gauge of measurement that can be reliably followed over time to reveal how an idea is working.

