

# Connecting with Sara

## Harvesting technological innovation to reimagine healthcare

### Background

PSI's work in over 50 countries revolves around engaging with Sara to continually meet her health needs. This engagement is principally driven through face-to-face interactions at the service delivery point, or within the community through community-based agents. This presents a limited window of influence for PSI, at the same time, Sara is not always able to access support at her own convenience, including within her home.

The world is rapidly changing. Advancements in mobile technology, coupled with increasing connectivity and affordability across the board makes the Sara more connected than ever. By 2020, mobile subscriber penetration in Sub-Saharan Africa, Asia and Latin America is expected to hit 50%, 76% and 78% respectively, with over 50% of subscribers using smartphones<sup>1</sup>. This represents an unprecedented opportunity to bring healthcare closer to Sara through mobile engagement.

By leveraging a Sara's increasing access to a mobile phone, we change how we engage with her to better meet her health needs at her convenience, in a cost effective and scalable manner. This requires a major shift in our technological capabilities to better drive mobile interactions. More fundamentally, it will require PSI to operate in a fully client-centered manner aimed at more long-term engagement with Sara.



### Connecting with Sara initiative

As part of the current Global Strategy, PSI has embarked on the Connecting with Sara (CwS) initiative which aims to harness technology innovation to strengthen the organization's capability to;



- i. **Initiate and maintain engagement** from PSI project teams to Sara through her mobile phone, to continually support her health needs
- ii. **Enable Sara to initiate engagement at her convenience** through her mobile phone to access health information, products and/or services. This is in line with PSI's Global Strategy focused on consumer-powered healthcare

Engagement should ideally be viewed as a continuum, considering Sara's evolving health needs over time. Sara's mobile phone provides a robust link to maintain engagement. PSI is looking to build lasting relationships with Sara, hence a key aspect of the initiative is robust enrollment geared to 'activate' this relationship. At the initial point of engagement, we obtain (i) Sara's mobile number, (ii) consent to engage with her using her phone, and (iii) basic profile information to develop a unique client ID (so that all engagements can be linked to her record) and to help shape future engagement.

<sup>1</sup> [GSMA Report, 2017.](#)

## Why connect with Sara in the first place?

The purpose of connecting with Sara through her mobile phone varies. Below are six key areas that can potentially be strengthened through mobile engagement.

### Understanding Sara's world



**Healthcare support is ideally shaped considering Sara's perspective, particularly regarding her behaviors and motivations.** The most common approach to insight gathering is through household surveys or focus group discussions, which can be expensive and inconvenient. Engaging with Sara through mobile phone-based panels allows her to participate when it is convenient and safe for her. The approach can potentially lower the cost of generating real-time consumer insights.

### Ensuring Sara has health information at her fingertips



**Timely access to health information is a critical aspect of ensuring Sara's health needs are met.** Sara's mobile phone provides an avenue for her to access health information whenever she needs it (including in her home). At the same time, it provides an avenue for PSI to routinely push tailored information to Sara based on her circumstances.

### Linking Sara to health products and services



**It is important for Sara to know where and how to access relevant health products and services.** Sara can use her mobile phone to find the nearest health provider in order to self-refer. In addition, PSI community agents can refer Sara to a health provider using her mobile phone, thus providing necessary follow-up to strengthen the linkage to services.

### Tracking Sara's healthcare uptake



**Tracking Sara's uptake of health products and services regardless of where she seeks them makes it easier to target support to providers where it matters most.** Sara can fall off the grid when she opts to seek products and services from certain actors, such as non-franchised private clinics or informal drug sellers. Sara's mobile phone can provide an avenue to which channels she prefers to access health products and services, in order to support market actors within those channels to provide affordable quality care.

### Obtaining Sara's feedback



**Sara's opinion matters with regards to her experience of accessing health services.** Obtaining objective feedback on service provision can be difficult and expensive based on face-to-face interaction at the point of exit. Sara can potentially use her mobile phone to provide feedback at her convenience without bias.

### Ensuring Sara's continuum of care



**When Sara accesses a product or service that is administered over time, such as family planning, adherence/retention can prove challenging** in certain situations. Mobile phone engagement can potentially be useful to provide remote support to facilitate adherence and client retention.

## How will we connect with Sara?

The method of mobile engagement with Sara should ideally be in line with what is convenient for her, considering the type of mobile handset Sara possesses (basic handset or smartphone), as well as Sara's behaviors around mobile phone use (for example, use of social media platforms by youth).

The CwS initiative aims to provide the capabilities to trigger the following modes of engagement;

- Interventions targeting all mobile handsets (basic and smartphone)
  - Standard text messaging (SMS) – including messenger bots
  - USSD - interactive session-based messaging
  - Call up (voice call)
  - Voice chat bot
- Interventions targeting smartphone users
  - Web apps
  - Facebook
  - WhatsApp



The initiative aims to build the infrastructure that provides flexibility with regards the mode of engagement over time. Sara engaged by USSD for one purpose may be engaged through a different mode in future.

## What does the Connecting with Sara architecture look like?

CwS represents the technological architecture that enables PSI to engage with Sara through her mobile phone, with built-in flexibility with regards to;

- **Who initiates the engagement:** PSI-initiated or Sara initiating the engagement at her convenience
- **Purpose of engagement:** As per the six key areas highlighted (information provision, linkage to care etc.)
- **Method of engagement:** SMS, USSD, Facebook, WhatsApp etc

The above capabilities mean that we can easily shape engagement in a manner that is most convenient for Sara, as well as most cost effective for PSI given the context. The technological architecture required to deliver this level of flexibility consists of three layers.

- DHIS2**, the database where all the information is stored, analyzed and visualized for use by program team. DHIS2 is an open source, cloud-based management information system (MIS) that is utilized by over 60 Ministries of Health to manage national health data. It is also PSI's institutional MIS.
- A **'web service platform'**, which is where the logic driving all the push/pull interactions with Sara is housed. The platform is able to communicate with the different interfaces in a standardized fashion
- Sara-facing engagement interfaces** used to submit information to/from Sara (SMS, USSD, Facebook etc)



## CwS implementation to date

Since the launch of the CwS initiative last year, over 20 countries have expressed interest in the initiative, of which 2 (Mozambique and Tanzania) countries have gone to scale, 3 countries (Zimbabwe, Kenya and Nepal) are currently piloting, and a further 7 countries<sup>2</sup> are preparing to pilot. Each of the projects is uniquely shaped to meet the engagement goals set out by the project team. See below for a summary of the projects:

### **Linking Sara to care through community level health promoters: Mozambique, Tanzania, Zimbabwe, Nepal, Nigeria:**

The objective of these CwS projects is to strengthen the efforts of community health promoters to link Sara with services available at the clinic through the use of the 'Connect App'. This is an Android based application used by promoters to (i) collect Sara's base profile information, mobile number & consent to engage, and (ii) to issue a referral via SMS (or paper voucher) to Sara. Once Sara approaches the service delivery point and presents the referral SMS, the provider uses a mobile web application to confirm the linkage so as to close the loop.

The CwS team is working closely with the project teams to unlock further engagement potential with this audience to continue to meet their health needs over time. For example, Tanzania have layered a client satisfaction component using the 'connected' clients, driven by mobile engagement. The initial engagement health area focus for Zimbabwe is male circumcision, while in the rest of the countries are focused on family planning.



**Sara-initiated provision of feedback: Kenya, Somalia:** The objective of these CwS projects is to gather feedback from Sara regarding services received in franchise clinics using her mobile handset. A poster is placed in the clinic inviting Sara to provide feedback using USSD (SMS style interaction which works with all handsets). Consent is requested at the point of feedback provision to unlock future engagement.

**Linking Sara to information and services through online Cyber educators: Guatemala, El Salvador, Nicaragua, Dominican Republic, Honduras:** The objective of these CwS projects is strengthen the efforts of online cyber educators to link clients with Zika Prevention Information and family planning services using Facebook and WhatsApp. Cyber Educators make the initial connection via Facebook and WhatsApp groups, and if Sara is interested, she is referred through her mobile phone. The service provider in turn confirms attendance via mobile to close the loop. This is layered with an automated client satisfaction survey directly to Sara's mobile.

**Sara self-referring to products and services: Kenya:** The objective of this CwS project is to enable Saras aged 18-25 to obtain a subsidized HIV self-testing kit. A Facebook advertisement invites Sara to register for a subsidized HIV self-testing kit. If interested, Sara provides some information (including consent to engage) and is automatically issued an e-referral voucher via SMS if eligible. The voucher can be redeemed through participating pharmacies, who in turn close the loop via SMS.

As at the end of 2018, we expect to have 12 countries live under the initiative, with up to half of them operating at scale. A further 6 countries are in the early stages of discussions regarding potential pilots<sup>3</sup>.

<sup>2</sup> Somalia, Nigeria, Guatemala, El Salvador, Nicaragua, Dominican Republic and Honduras all starting pilots in 2018

<sup>3</sup> Cameroon, Madagascar, Malawi, Ghana, Cambodia, India

## What next? Building on existing investment

### Priority 1: Strengthening the core architecture

To date, the core CwS architecture has been built based on specific country project needs, given that there was limited core system development funding to start with. The main limitation to this approach has been the custom nature of system development based on very specific country needs, which has meant that some of the core functionalities have not been easily replicable or scalable, limiting the potential reach of the initiative. This means that each time a project expresses interest, much of the desired functionality needs to be developed, despite having similar interventions that are live. However, there is need to re-configure some of the core functionalities of the web service platform in a more generic fashion in order to better facilitate large scale deployments.

### Priority 2: Developing architecture for Sara-initiated engagement

PSI's Global Strategy points to consumer-powered healthcare; hence we intend to focus more effort on developing system capabilities so Sara can initiate engagement at her own convenience, including in the comfort of her home. The universal solution for this entails Sara dialling a mobile short code (e.g. \*123#) that opens up a USSD menu of options containing health related information for different health challenges. This can be layered with a self-referral to products and services. The short code can be accessed by all mobile handsets. A similar mechanism will also be developed for smartphone users so as to leverage the web and social media as an entry for consumer powered engagement. The use of bots in the shape of digital health assistants will be explored to enhance the user experience with regards to matters such as family planning counselling on methods, as well as issuing referrals to products and services.

### Priority 3: Deep analytics capabilities to unlock future engagement potential of 'connected' Saras

As the CwS initiative continues to scale, so does the pool of 'connected' Saras within the systems (i.e. Saras who have provided their mobile number, consent to engage, and basic profile information). With each touchpoint we have with this pool, we continue to gather more information about the audience. Given the wealth of data generated, it will become increasingly difficult for project teams to analyze/mine/query the database in order to identify opportunities for future engagement as well as key drivers of uptake. In addition, we are likely to encounter challenges with regards to uniquely identifying and layering information for each of the Saras in the pool. We require funding to develop the analytical engine that will help guide future engagements in order to unlock health impact for our audience throughout their life cycle.

## Sustainability plan

We have a unique opportunity to leverage PSI's existing networks in over 50 countries to deploy CwS, supporting Sara's health needs. The reach of CwS can potentially go beyond PSI. As a signatory organization of the [Principles of Digital Development](#), PSI is committed to **open-source development** and producing sustainable digital tools that can be shared with the community for exponential impact. This commitment is embodied in PSI's adoption and development of tools and integration with DHIS2, the open source software that is already used by many MOHs and NGOs in public health. PSI's longer-term vision is to **release CwS as a global good** into the core of DHIS2. This means the technology would be accessible for use by any MOH or NGO to connect with clients via their mobile phones, and potentially adapt in new use cases beyond PSI's programmatic focuses in areas such as emergency response, refugee assistance programs, and food security. PSI has a strong collaboration with the University of Oslo, the developers of DHIS2, and is already working with them to transition other PSI-developed open-source digital tools into the core of the software for the rest of the development community to use.

