



HUMAN CENTRED DESIGN IMPLEMENTATION CASE STUDY GHANA



APPLYING HUMAN CENTRED DESIGN (HCD) TO IMPROVE COVID-19 VACCINATION UPTAKE AND CONSISTENT HANDWASHING AMONGST HEALTH WORKERS AT INFORMAL COVID-19 VACCINATION SITES

EXPERIENCE FROM GHANA



01 BACKGROUND

The success of COVID-19 vaccination across the globe has yet again proved the effectiveness of vaccines against ill health. While a retrospective conclusion about vaccine effectiveness in the face of the COVID-19 pandemic is easy to draw, changing human behaviour to take a vaccine in the heat of the pandemic was often challenging. Pre- and during the pandemic, behavioural factors delaying acceptance or refusal of the COVID-19 vaccine(s) were varied. Given the urgency needed to respond to the growing pandemic, unpacking and understanding these behavioural factors required a shift in design strategies from the traditional social and behaviour change (SBC) approaches.

The Ministry of Health, Ghana and UNICEF Ghana immediately turned to the Human Centred Design (HCD) approach to develop behavioural interventions for rolling out the COVID-19 vaccination while concurrently addressing handwashing practice for frontline health workers in the Greater Kumasi metropolitan area. Human Centered Design provides tools to focus on people and create solutions to address challenges which require tailored solutions based on local insights, local people's motivations, resources, and capabilities.

This behavioural design methodology provides an organized process for working directly with users – beneficiaries and service providers – and proposes solutions to effectively address a health challenge. HCD enables Ministry of Health, UNICEF, and other implementing partners to better understand people and what keeps them from seeking and/or supporting health services in their communities. Its introduction and roll out in various countries allows implementers

to perceive challenges from the perspective of the community and identify opportunities where previous solutions have failed.

Since 2020, UNICEF has collaborated with national governments in 14 countries to use the HCD approach to develop demand generation strategies with a plan to expand it to 7 to 8 additional countries by end of 2023. UNICEF Ghana has proactively drawn learning and insights from the countries that have been formally trained to inform its own practice, including looking for behavioural solutions for the COVID-19 vaccine roll-out.

This case study documents Ghana's experience applying HCD in the COVID-19 vaccine rollout. Specifically, it draws out insights on what and how HCD was applied, and results achieved.



Key terms used in this case study

1 Social and Behaviour Change (SBC)

a set of approaches that promote positive and measurable changes toward the fulfilment of children's rights.

2 Human Centered Design (HCD)

a problem-solving process that begins with understanding the human factors and context surrounding a challenge.

3 Behavioural Design

is a systematic understanding of how individuals think and how they make decisions with a view to ethically design positive behaviour desired by both the individual and society.

4 Wayfinding

a process or information system that enables people to move through a familiar or unfamiliar environment/setting to a desired destination with ease.

5 Rapid Inquiry (RI)

is used at the research phase of HCD. Its based on applying fast techniques to understand the many social, cultural, political and economic influences and motivations in a community.

6 Prototype

an inexpensive, scaled down versions of the proposed change/product. It's anything a person can look at and respond to.

7 Prototyping

is a tool along the HCD continuum which involves inviting the community to shape the idea's form and function. It assists designer know if generated ideas align with community values, motivations and existing habits.

8 Iteration

is a tool along HCD continuum which involves making a series of design versions to the prototype to learning and improvement.

9 Heuristics

mental shortcuts which allow humans to ignore extra information, save time, and preserve cognitive energy.

10 Veronica Bucket

a Ghanaian invention helping in fighting the Corona virus. Its comprised of a bucket and a basin on top of a wooden stand for quick and hygienic handwashing.

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CONTEXT AND DESIGN APPROACH

Around February 2022, a huge disparity existed between supply and vaccine coverage in Ghana. While the country had enough vaccinations to inoculate 88 per cent of its 'eligible' population with at least one dose, uptake was dismally low. Approximately half of the country's available vaccines have been administered to about 16 per cent of the target population.

According to a pre-COVID-19 vaccination survey conducted in Ghana Greater Kumasi Metropolitan area,

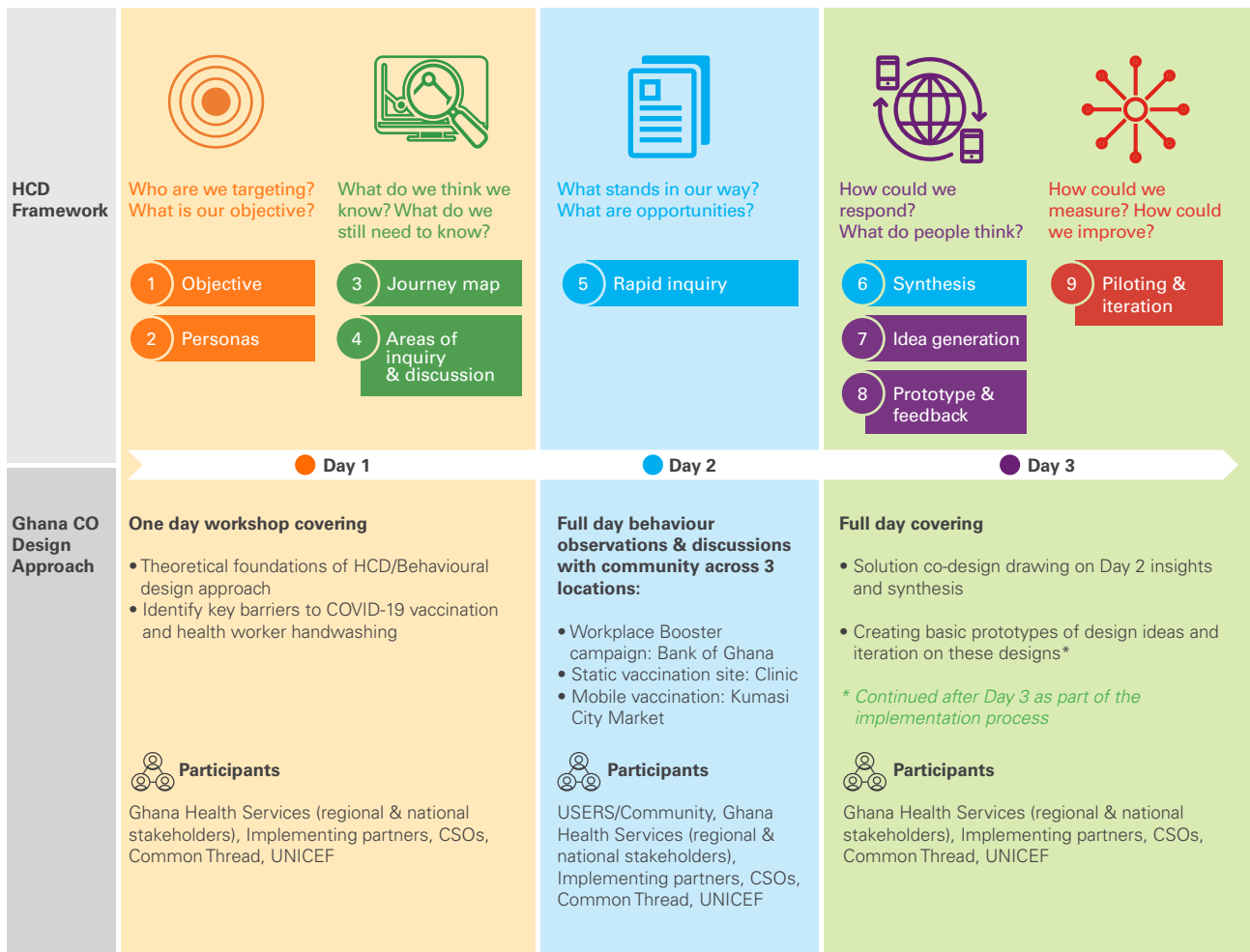
about 54.67% of Ashanti region residents expressed an intention to get vaccinated against COVID-19 and to wash their hands regularly to prevent the spread of diseases.¹ Ironically, however, rates of COVID-19 vaccination and regular handwashing remained low. Kumasi is Ghana's second-largest city and historic capital of the Ashanti Empire. It is also one of the hardest hit areas in Ghana since the outbreak of the COVID-19 pandemic in 2020.² The Ministry of Health's Ghana Health Service (GHS), UNICEF and Common Thread formed a collaboration to tackle the challenge. In line with UNICEF's shift to applying behavioural science approaches in SBC, HCD became a preferred starting point to understand and develop solutions to the problem. Among other things, HCD works well in contexts where health services are available but not used. It helps to improve the understanding of the perspectives and needs of both caregivers and service providers to create demand. The situation in Ghana was ideal for using HCD to solve the COVID-19 uptake challenge.

Figure 1 summarizes the behavioural design adopted to develop the strategy for this initiative.

¹ Acheampong et al, 2021. Examining Vaccine Hesitancy in Sub-Saharan Africa: A Survey of the Knowledge and Attitudes among Adults to Receive COVID-19 Vaccines in Ghana. Available from <https://www.mdpi.com/2076-393X/9/8/814>

² Ibid.

Figure 1: HCD design approach for the wayfinding strategy



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HCD OUTCOMES

3.1 Enhanced/Improved understanding and practice of the HCD concept and framework

Over a three-day period, national-level and regional-level stakeholders from Ghana Health Services, UNICEF staff, implementing partners, and civil society organizations received theoretical and practical HCD skills training. These involved an initial introduction to behavioural design, rapid inquiry in three locations and a co-design workshop using rapid inquiry findings.

Blending classroom, practical data collection and co-design of a final intervention is a unique approach in HCD which helps improve understanding and application of the approach. It not only increases confidence in the use of the approach but also creates tangible strategies to address the vaccination challenges, as was the case

with wayfinding. After this initial engagement, UNICEF continued working with key stakeholders in implementing the solution. This has further embedded the practice, leading to an increased interest in the approach in developing solution where previous SBC efforts have been slow or unsuccessful.

3.2 Developing contextually relevant solutions with stakeholders

HCD puts communities and stakeholders at the centre of solution development. Through 'rapid inquiry' Ghana Health Service staff, UNICEF and implementing partners completed a full day of observations and conversations with vaccinators and people receiving their COVID-19 vaccines in Kumasi. Up to three different vaccination sites were included in the rapid inquiry stage:

- a workplace booster campaign at Bank of Ghana
- a static vaccination site at KMA clinic, and
- a mobile vaccination site at Kumasi City Market.

Co-design and rapid inquiry are critical in HCD. Table 1 below summarizes key questions guiding this rapid inquiry phase.

Table 1: Rapid inquiry guiding questions

COVID-19 vaccination (general population)	Hand washing (health providers)
<ul style="list-style-type: none"> • How might we explain this gap between supply and vaccine coverage? • Are people in Ghana hesitant to get vaccinated? • What is the demographic breakdown of those who have vs. have not been vaccinated? • Do people have difficulties accessing vaccination services? • Which vaccination sites are most popular? • Which vaccination sites are least visited? • What barriers exist to driving vaccination at these sites? 	<ul style="list-style-type: none"> • What is the current process/environment like for hand washing at informal vaccination sites? • With what frequency do health workers and health assistants practice hand hygiene during COVID-19 vaccination campaigns?

From the rapid inquiry exercises, it was established that:

1. Many people in this region were “vaccine opportunistic”. They didn’t have any particular hesitancy about being vaccinated but were not urgently or actively seeking out vaccination.
2. Most Ghanaians in the region were willing to get vaccinated if the opportunity arose (e.g., at work, at the market etc).
3. In the health facilities, health workers knew the importance of hand washing with soap under running water as well as the frequency of the practice (i.e., every fifth or sixth patient).
4. There was a disparity between this health workers’ knowledge and the actual practise of this behaviour.
5. Health workers often neglected to wash their hands and relied more on hand sanitizer.

These observations led to two conclusions, which in turn informed the design of contextually relevant solutions:

- For people who are vaccine opportunistic, it is critical to make the opportunity to get vaccinated very salient and easy.
- Inaccessibility of hand washing facilities and the lack of salient reminders to wash hands regularly were identified as key barriers to appropriate behaviour against what is stipulated in the practice guidelines.

3.3 Enhanced participation of the community and frontline health works in designing innovative health solutions.

Findings from the rapid inquiry informed ‘prototyping and iterating’ of wayfinding to direct people to convenient vaccination sites. Prototyping and feedback allows for tailoring and improving ideas by testing them with the community and frontline health workers.


From a community perspective, the aim was to reduce friction so that as little effort as possible is required from community members to get vaccinated. For health workers, there was an opportunity to use visual reminders placed within health workers’ immediate environment to remind them not only to wash their hands regularly between patients, but also to ensure their workstations are set up for handwashing at the beginning of each vaccination session.

The focus of the prototyping was to use prompts to increase vaccination, especially among market women whose daily hassle of buying and selling make it impossible for them to get vaccinated and to seek other routine services. Once the key tenets of the wayfinding approach were established, iteration and scale up followed. Tables 2 and 3 cover critical factors and considerations on community and frontline health work engagement as part of the HCD process.

Table 2: Critical issues addressed with communities and frontline health workers using prototyping, feedback and iteration

COVID-19 vaccination (community strategies)	Hand washing (frontline health worker strategies)
<ul style="list-style-type: none"> • Place branded signs outside each static and mobile vaccination site indicating the type of vaccines available, the days/hours of availability, eligible populations and requirements, and the approximate time needed to get a vaccine. • Signs use consistent branding and should have a single visual indicating that vaccines are available at this site. • Create signs, murals and posters within busy places in the community, including markets, indicating where to go for COVID-19 vaccination. • Materials use consistent branding and symbols and include information on the days/ hours of availability, eligible populations and requirements, and the approximate time needed to get a vaccine. 	<ul style="list-style-type: none"> • Equip mobile and static vaccination sites with handwashing materials, including clean water (from working taps), soap, tissues/serviettes, and hand sanitizer. • Place reminders in highly salient places reminding health workers to wash their hands after every fifth patient. • Reminders take the form of stickers placed on the vaccination table or tablet where data is being entered. • Use heuristics such as “give me five” to remind health workers of the key steps to wash hands effectively.

Table 3: Key considerations for co-creation with communities and health workers

Issue	Key consideration
Branding	<ul style="list-style-type: none"> Design team leveraged recognizable colour schemes building on national vaccination cards and the green and gold of the Ghana Health Service’s ‘Good Life’ brand.
Messaging	<ul style="list-style-type: none"> As part of messaging creation, mock-ups included critical messaging around how to prepare for the vaccination process. <div style="display: flex; justify-content: space-around; align-items: center;">  </div>
Feedback loops	<ul style="list-style-type: none"> A rapid field-testing kit were developed and used to engage the in-country partners, The Light Foundation, Theatre for Social Change, and RISE Ghana to speak with both vaccinated and unvaccinated adults in Kumasi to get their feedback on the messaging, the look and feel of the prototypes developed. Community and frontline health worker feedback provided invaluable insights on how to ensure the messaging and imagery were both culturally relevant and impactful.

3.4 HCD institutionalization

Applying a behavioural design to develop community-driven solutions for improving health service delivery has received interest from stakeholders in the Ghana Health Services (GHS). For example, the Health Promotion Division (HPD) is actively discussing with UNICEF plans for cascading the training to staff at regional and district levels. HPD is a critical ally in immunization initiatives in Ghana.

3.5 Immunization uptake

Although wayfinding alone may not increase COVID-19 vaccination rates, a consistent visual marker for a service may help establish familiarity and confidence in the service.³ Data from Ghana Health Services – Expanded Program on

Immunization (EPI) covering the intervention period from February to November 2022 shows the percentage of fully vaccinated people in Ashanti (Kumasi region) rose from 24.6% to 35.4%.⁴ Further analysis is needed to provide an accurate estimate of Wayfinding on immunization uptake.

3.6 Beyond immunization

Results from applying HCD to COVID-19 challenges in Ghana show it has now aroused interest in other sectors. For example, HCD is now being applied in the water, sanitation and hygiene (WASH) sector. To this end, a national training of trainers on HCD was conducted with 48 participants from the government, non-governmental organization (NGO) partners and the UNICEF WASH team to co-create solutions to accelerate the construction of sustainable latrines to end open defecation in rural communities in Ghana.

³ UNICEF Ghana and Common Thread, ‘Give me a Sign: How wayfinding can help the vaccine opportunistic’, Common Thread blog, 8 August 2022, <<https://gocommonthread.com/blog/2022/08/08/give-me-a-sign/>>, accessed 16 December 2022.opportunistic. Retrieved from <https://gocommonthread.com/blog/2022/08/08/give-me-a-sign/>

⁴ Wayfinding may have contributed to this increase. It is however not solely attributable to the change witnessed.



Furthermore early-stage interest has been expressed by UNICEF’s Social Policy and Inclusion team following their annual review with government partners. In the new country programme (2023–2027), the Social Policy and Inclusion team has identified the need to strengthen the relationship between local communities and duty-bearers in the implementation of pro-poor programmes through effective SBC strategies. HCD has been identified to be an effective leveller to capture ideas and co-create solutions around promotional materials on programmes like Livelihood Empowerment Against Poverty (LEAP), a government social cash transfer programme meant to empower poor and vulnerable people to access health and social services.

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IMPLEMENTATION CHALLENGES

4.1 General lack of visual wayfinding resources for COVID-19 vaccination.

Prior to the intervention, very few mobile or static vaccination sites had any signs, posters, murals, or other indications that vaccines were available. Most people learned about vaccine availability from radio announcements or word of mouth. Within vaccination sites, the process for vaccination was typically not indicated using any kind of visual cues. People relied on health worker instructions to guide them through the process.

4.2 Inadequate information provided by existing wayfinding materials.

Existing signs did not indicate key information about vaccination (timing, requirements, availability). Existing signs did not include a hotline or phone number that people could call to ask questions about the COVID-19 vaccine. There was a lack of clear guidance indicating where and when mobile vaccinations were taking place.

Existing signs did not set expectations for what COVID-19 vaccination services were like or what the process was. People who do not have accurate expectations of the vaccination process (e.g., how long it will take, what they need to bring) may become frustrated and leave the vaccination site; these people are especially unlikely to return for vaccination.

Wayfinding materials did not indicate what vaccines were available (and the efficacy of all vaccines available), and some people have strong preferences for the type of vaccine they would like to take. Any wayfinding that did exist indicating the location of mobile vaccination sites did not provide information on how long vaccinations would be taking place at each respective site.

4.3 Inappropriate placement of wayfinding visual cues.

Wayfinding for vaccination did not exist in busy public places, even in areas where mobile vaccination was taking place. Wayfinding for vaccination did not exist directly outside of static vaccination sites. This would have encouraged people to come for vaccination.

4.4 Existing wayfinding materials failed to address critical barriers and concerns due to inadequate information and improper placement.

Poorly made hand signs failed to build trust in vaccination, lacked urgency. In the facilities, they did not remind health workers to prepare for handwashing, clarify water safety, or promote handwashing. Additionally, the handwashing signs were poorly placed and not mobile, making them challenging to use in mobile vaccination sites.

4.5 Inconsistent National branding across various wayfinding assets.

Existing COVID-19 prevention resources lacked a consistent national brand voice. While some utilized the “Good Life” brand, others disregarded branding guidelines and appeared cluttered. Moreover, the majority of these were only accessible in English, and none of the existing signs included messages or images from reputable sources, such as religious leaders.

4.6 Structural barriers to regular handwashing.

Beyond the lack of wayfinding, many vaccination sites were not equipped with the necessary equipment (Veronica buckets,⁵ clean water, soap, tissues/serviettes, and hand sanitizer) to enable regular hand hygiene.

Other issues included:

- Handwashing stations too far away from vaccination sites or are not available at all.
- Handwashing stations broken or do not have sufficient water or soap or both.
- Limited availability of Veronica buckets due to theft and damage.

4.7 Vaccination environments were not optimized to create and support handwashing habits among health workers.

Existing signs did not capture busy health workers’ attention. Health workers are used to washing their hands in health facilities but are not as used to doing so in the community (e.g., at mobile vaccination sites). There were no reminders to health workers to create this habit outside the health facility. Social proof is important. Health workers often do what others are doing. Existing wayfinding materials to encourage health worker hand hygiene did not create or leverage social proof.



⁵ Veronica bucket is a Ghanaian invention helping in fighting the Corona virus. Read more from: <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Veronica-Bucket-The-Ghanaian-invention-helping-in-coronavirus-fight-895813>

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LESSONS LEARNED

Wherever possible, information on wayfinding materials should be adapted to include the particulars of the vaccination site, especially their opening hours.

Our findings revealed that improved messaging was helpful and understandable. There was a clear preference for the green and yellow colour scheme. Based on feedback, there were further opportunities for adaptation identified including translation of the messaging into Twi (or other local languages, as appropriate); and adapting the hairstyle and clothing of the woman portrayed depending on the particular community in which the sign is placed.

With this feedback in hand, we will be working with health authorities in Kumasi to invest further in learning how renewed wayfinding and investment in reducing friction for opportunistic vaccinators will impact vaccination rates at these sites. This rapid and practical process has also piqued interest by partners in Ghana in deeper inquiries and how community-driven solutions and behavioural design can support improved health services for the people of Ashanti region.



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FUTURE HCD PLANS IN GHANA

Given that there is so much interest in applying HCD strategies within UNICEF and for other partners, including government agencies and civil society organizations, the following activities are being planned by the SBC team:

- Support the capacity building of Health Promotion Officers across Ghana to improve their skills on how to apply HCD for designing community-based interventions. This is part of the broader objective to institutionalize HCD in government implementing agencies
- As part of the UNICEF Regional Office's SBC agenda, UNICEF Ghana is working with Common Thread to implement another HCD project – designing solutions to improve adolescents sexual and reproductive health services in Ghana. The project aims at reducing adolescent pregnancy, promoting their mental wellbeing and overcoming nutritional challenges. As part of the intervention, the capacity of Ghana Health Services and NGO partners are being built to position them on how to use HCD principles to design interventions. This project is expected to serve as learning platform for other country offices in the region.
- Other development partners in Ghana, including some USAID projects, are interested in applying HCD to their work. Based on this, a proposal has been made to form a Technical Working Group for Behaviour Science of which HCD work will be integrated to promote sustainability



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