Case Study: Medic Mobile

Sketching With Design Cards:
A Medic Mobile Participatory Design Method

Principle(s) Addressed
Design with the User, Understand the Ecosystem

Overview

Medic Mobile is a digital health organization that designs, deploys and supports software tools for community health workers delivering care at the last mile. Human-centered design is core to our process of understanding our users, determining what workflows our tools should support and deciding how our tools should work. We've developed the unique method of using design cards, featuring simple sketches of key people, places and things, to facilitate design sessions with users. Health workers play a vital role in our design process because they are the experts on their own daily work; their insights are essential to developing tools and workflows that fit the context and help to improve the health of communities. Communicating visually by sketching, a process made easier using design cards, helps health workers participate in imagining new systems that better serve them and their communities.

Objectives

Understanding workflows is vital for making informed judgments about which technologies may be useful to solve a problem or accomplish a particular goal. Experienced designers use sketches to help to communicate with a broader audience about what they imagine building. Design cards are an inclusive and accessible method that encourages individuals who may have had little design training to get involved in the design process.
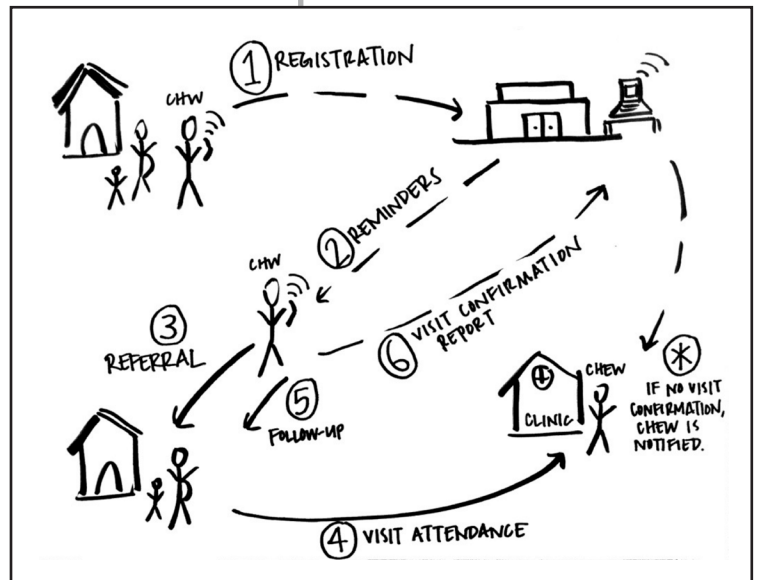

FIGURE 1. This image depicts a hand-drawn workflow for a mobile-enabled antenatal care initiative. In this workflow, health workers use Medic Mobile tools on their phones to register, refer and track visits and to report danger signs and delivery information ffor pregnant women in their communities.
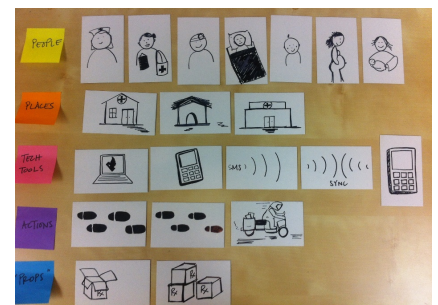

FIGURE 2. Design cards depict common elements in health and development work.

IMAGE: MEDIC MOBILE

Principles *for* Digital Development

Medic Mobile develops tools, such as SMS-based text forms and subscriber identity module (SIM) applications for patient and medical supply information, that health workers can deploy using simple mobile phones. Building workflow maps (see Figure 1) is essential to designing appropriate tools and configuring the system. To facilitate this process, Medic Mobile created a deck of design cards featuring images of common elements in community health programs (e.g., a patient, a health clinic, medicine.) During a design session, cards are laid out to depict the workflow that users describe. Figures 2 and 3 show the design cards and how they are used to create workflows.

FIGURE 3. A workflow sketched using design cards.
IMAGE: MEDIC MOBILE

Design cards:

- Make the process more participatory and transparent by engaging users in system design and iteration.

- Assist the design team in obtaining key information, reducing misunderstandings and supporting meaningful conversations with target users.

- Help to create a shared vision and commitment to improve health care delivery among partners.

Using design cards at a Nepal Leprosy Trust and American Leprosy Missions leprosy group meeting at Lalgadh Leprosy Hospital and Services Center in Dhanusha District, Nepal.
PHOTO CREDIT: JAY EVANS

Background

Medic Mobile uses many strategies during the design process to engage users. Sketching ideas and workflows is one of our most reliable and favored methods. Sketching helps validate the information we receive from users and provides a degree of clarity and transparency that is difficult to achieve with written notes. It is flexible and brings a participatory element to the process that may be missing from user analysis or technical product specifications. Making design visible is also useful when working through translators. It creates a more direct connection to the user and ensures that important information isn't missed.

We found that many facilitators and workshop participants weren't confident at sketching complex workflows and concepts. To solve this problem, we developed a set of design cards to depict the most

Design cards at Medic Mobile's San Francisco office.
PHOTO CREDIT: KATIE KELLY

common elements in workflows related to healthcare delivery and development projects in general (E.g., a patient, health worker, medicine, clinic.) This allows our team, partners and users to build sketches quickly and dynamically. Each card depicts a component of the healthcare system: community members, healthcare workers, places, technology tools and actions, such as clinic visits. The images on the cards are clearer and more consistent than hand-drawn sketches that users might try to draw themselves in the absence of sketch cards, so participants can more easily communicate their ideas and make corrections to the workflow.

Design cards have an inclusive effect, enabling our participants to more actively engage in discussion. Medic Mobile has run workshops with individuals with varying levels of experience and education, including patients, health workers, Ministry of Health officials, nonprofit program managers and academics. Individuals enjoy taking part in a participatory design process using design cards, and we've seen them facilitate dialogue and learning, teamwork, empathy and creativity.

Project Lifecycle Application

The Medic Mobile team uses design cards as part of our broader human-centered design process, but design cards can be integrated into any design or implementation process that your organization uses. Consider how they fit into a project lifecycle framework:

- **Analyze & Plan.** Design cards can be used during the initial phases of an initiative's or tool's development to gather foundational information. Design cards facilitate gathering data on the ecosystem [http://digitalprinciples.org/understand-the-existing-ecosystem/] for which a tool is being designed. They can help to clarify existing workflows, highlight challenges, and identify the individuals involved and any technological, legal and policy requirements that may exist. As participants describe a scenario, we select cards corresponding to keywords: a pregnant

Using design cards at a home visit with family members and community health workers in Narok, Kenya, through partnership with Christian Aid.

PHOTO CREDIT: MAEGHAN ORTON

"Our job as designers and facilitators is to continually call attention to the needs of end users."

DIANNA KANE
Senior Designer with Medic Mobile and creator of the design cards

woman, a health clinic and medicine, for example. Once a basic workflow is in place, we introduce additional cards to explore how the workflow responds to changes. We might place a card that shows rain falling from clouds over the pregnant woman's house to ask how her journey changes during the rainy season, or we might remove the supplies card from the clinic to find out what happens when medicine isn't available. This helps to ground future designs in the practical realities of program implementation within the constraints of the ecosystem and ensures that the community's priorities have been heard.

- **Design & Develop.** In imagining a new system supported by Medic Mobile tools, we use design cards to explore improvements to the current workflow. We add or reorganize cards to quickly and easily explore new workflows, test users' receptivity to new concepts and discuss the potential impact. Design cards are flexible and make it easy to experiment with new ideas and adjust as necessary. They can also help facilitate group role-playing to try on different scenarios. This process helps our initiatives to be resilient, impactful and realistic. In our experience, hosting conversations with users in this participatory and inviting way helps to generate new ideas and bring information to light that can inform the workflow design.

- **Deploy & Implement.** No matter how much thoughtful design work is done, additional insights inevitably appear after the tool is in use. Practical experience with our tools can yield meaningful design changes and improvements to the deployed system. Design cards can facilitate the collection of this valuable information during iteration meetings and give partners and users a way to communicate insights, new ideas and challenges. Design cards can also help partners to design support systems surrounding the digital tool, such as for supervision, training or technical troubleshooting.

- **Cross-cutting: Monitor & Evaluate.** The opportunity to design with the user extends through to monitoring and evaluation (M&E). Meeting with stakeholders to gather qualitative data on the pilot phase and identify opportunities for improvement is an important part of M&E. Participatory workshops and design-card

RESOURCES

A Design Journey for Maternal and Child Health Case Study, Principles for Digital Development.
http://digitalprinciples.org/a-design-journey-for-maternal-and-child-health-case-study/

Global Health, Design Thinking and Social Justice: Isaac Holeman at TEDxCambridgeUniversity [video], TEDx Talks.
https://www.youtube.com/watch?v=fyG8GIUORtc

Information on design practices and to order cards, Medic Mobile.
http://medicmobile.org/design

Medic Mobile Design Cards in Action: System Role Play [video], Medic Mobile.
https://www.youtube.com/watch?v=aeB4YMx_fIU&feature=youtu.be

Medic Mobile's Human-Centered Design Toolkit: A Spotlight on Sketch Cards, Medic Mobile.
http://medicmobile.org/blog/medic-mobiles-human-centered-design-toolkit-a-spotlight-on-sketch-cards

Q&A with Medic's Senior Designer Dianna Kane on Sketch Cards, Medic Mobile.
http://medicmobile.org/blog/q-a-with-medics-senior-designer-dianna-kane-on-sketch-cards

exercises can help users to articulate impact stories resulting from the new system, provide substantive feedback on the model and communicate the challenges they experienced. These lessons learned can help to interpret quantitative monitoring data and inform future initiatives or iterations of the digital tool.

To learn more about Medic Mobile and the organization's approach to participatory design, contact Dianna Kane, dianna@medicmobile.org.

Lessons Learned and Recommendations

Using design cards helps us to practice the principle of designing with the user [http://digitalprinciples.org/design-with-the-user/] throughout the project lifecycle. To make the design process more participatory, it is important to do the following:

- **Keep incorporating user input throughout the project lifecycle.** Human-centered design is not a once-and-done process but should inform an initiative or tool from the pilot implementation phase through to M&E. Design cards can help to collect useful qualitative data on user experiences before, during and after a new tool's introduction.

- **Identify the right individuals.** During the planning phase, seek out individuals with different experiences, educational levels, backgrounds, professional levels and responsibilities. Emphasizing the perspectives of individuals who will interact with a digital tool firsthand is a vital part of user-centered design. It's also useful to find and engage individuals who can describe the practical realities of program implementation. Make sure to research and understand the policy landscape and to collect input from individuals who are responsible for the long-term support and management of the program, such as managers and officials. Create opportunities for marginalized individuals, such as women and minority groups, to share their ideas and experiences in a safe environment. The term human-centered design implies attention to this broader range of stakeholders, rather than focusing exclusively on a preordained set of users.

- **Encourage transparency.** Find ways to communicate back to users how their feedback is incorporated into the tool or initiative and to create opportunities for iteration. Partners need clear expectations for what is expected in a participatory design process. To facilitate this, Medic Mobile shares a detailed agenda identifying the goals, participants and proposed activities in each workshop. Partners are encouraged to get involved as co-facilitators in the design process if they desire, and many partners request copies of our design cards and other workshop materials so they can replicate the process on their own in the future.

- **Facilitate a conversation.** When using design cards, the designer is not the expert providing answers so much as a facilitator asking thoughtful questions and prompting stakeholders to get to the root of their own issues. Design cards help users and partners to direct the discussion and help the facilitator to observe, learn and understand the needs and motivations of target users. This results in a participatory design session that centers the users, their needs and their viewpoints.