

Mobile Phone Form Design Guide

General Form Design

This handout is meant to provide some general suggestions on best practices for designing mobile phone-based forms for use by Community Health Workers. It was designed for CommCare, but is relevant to most mHealth tools. Information here refers to forms used for simple data collection or forms used for complex counseling interactions.

Some key questions to consider before diving into Form Design:

1. Who are the users of your mobile application/tool?
 - a. What is their level of literacy? (low-literate users may benefit from the use of multimedia)
 - b. To what extent are they comfortable/familiar with using phones? (maybe the program can be rolled out in steps or stages as the users become more familiar with the technology)
 - c. What is their level of training/mastery of technical knowledge? (some users may benefit from decision or counseling support embedded in the form)
2. What data do you want to collect?
 - a. Are there existing materials to adapt? (consider if paper forms can be modified)
 - b. What type of phone are you using and what can it capture? (GPS-capture may require a smartphone)
 - c. What data is available? (don't ask for date of birth if no one will be able to provide an answer)
3. In what circumstance will the mobile device be used?
 - a. If you have existing paper forms, do they actually cover multiple "events"? (would it work better to have multiple separate forms like registration and home visit)?
 - b. Can the mobile device do any calculations or other decision support that will help the user?

A key takeaway is that your form need not be just for data collection, but rather as a tool and resource for the health worker. Keeping in mind how the form will actually be used will inform how you can design appropriate messaging, media content, and workflow/decision support.

Language

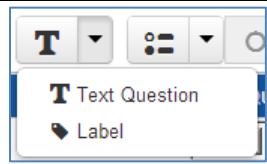
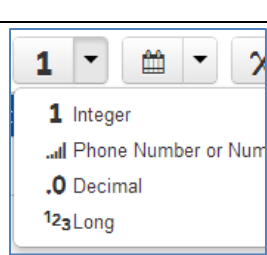
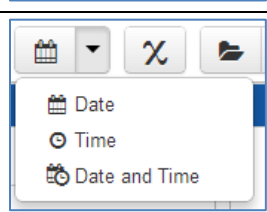
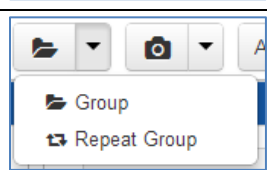
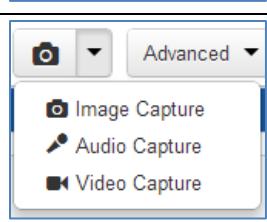
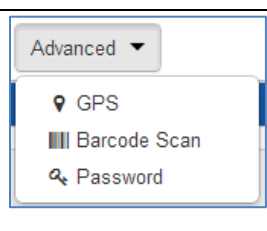
Language should be simple and clear. This can take some effort but if your text is ambiguous. Additionally, when possible it is best to use the local language that the phone's user will understand. If this is only an oral language, it may be best to explore the use of multimedia.

Question Types - Overview

There are many types of questions that can be used to design a form; the primary question types in CommCare are shown below. These questions types are common to most mHealth tools. In general, it is best to minimize extensive text-entry as this can be challenging on the phone. Instead, wherever possible try to create cascading lists (i.e. instead of asking for village, ask the user to choose the district from a list, then choose block, then choose the village from a list).



Question Types - Detail

	<p>TEXT QUESTION. Free form text entry</p> <p>LABEL. Used to display text or images only e.g. a counseling message. No input required.</p>
	<p>MULTIPLE CHOICE (SINGLE ANSWER): A question with multiple choices where only one choice can be selected</p> <p>MULTIPLE CHOICE (MULTIPLE ANSWER): A question with multiple choices where one or more choice can be selected</p>
	<p>INTEGER: A whole number. If a 0 is entered as the first digit, the 0 will not be stored.</p> <p>PHONE NUMBER/NUMERIC ID: any identifying number can be entered, including those starting with a 0</p> <p>DECIMAL any decimal number can be entered</p>
	<p>DATE: For any date question, shows up in calendar format</p> <p>TIME: Any time question</p> <p>DATE AND TIME: Any date and time question together</p>
	<p>GROUP: This type of question is a container for other questions. Questions added within a 'group' will appear within a given section header.</p> <p>REPEAT GROUP: (Advanced)</p>
	<p>IMAGE CAPTURE: Capture an image/photo (Android only)</p> <p>AUDIO CAPTURE: Capture an audio recording (Android only).</p> <p>VIDEO CAPTURE: Capture a video recording (Android only)</p>
	<p>GPS: get a GPS reading</p> <p>BARCODE SCAN: activates a barcode scanner to capture information (must be separately installed)</p> <p>PASSWORD: Text question, where the characters you enter are displayed as '*'</p>

Question Required?

If a question is marked as required/ mandatory, a user will not be able to skip it without providing an answer. They will get an error message stating that they must answer the question. It is good practice to make a question required when it is always needed and is always possible to obtain (i.e. name). If a question is only occasionally required, consider putting a question like “is phone number available? Yes or no” and making that question required. This minimizes the risk that the user will skip questions.



Registration

Please enter date of birth

Sorry, this response is required!

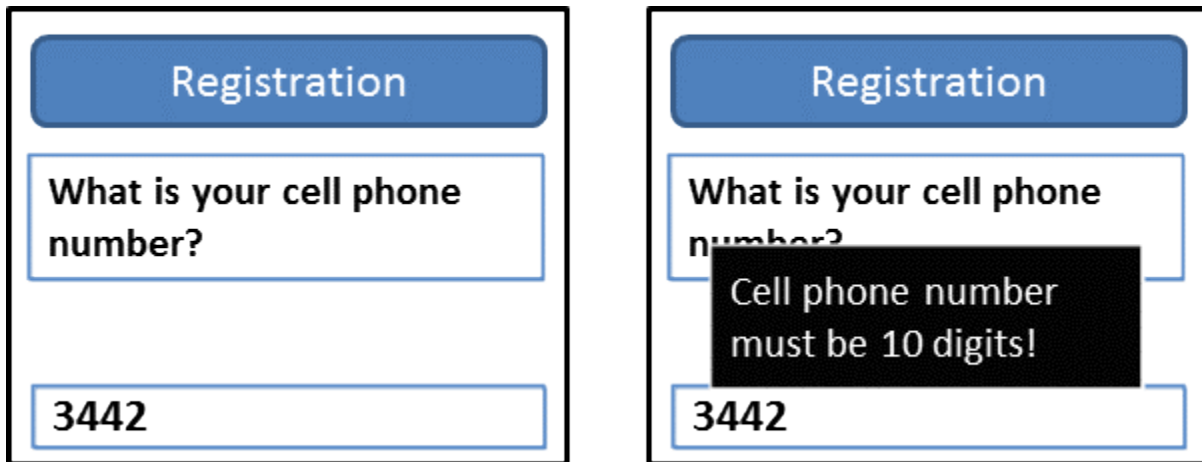
Display Condition/Skip Logic

Skip logic deals with the question of when you want a **question** to show and when it should not show. This is a crucial step to making an application easy for the user. There can be very complex branching logic behind the scenes, but the user experiences a logical, straight-forward progression question-to-question.

For the display condition section you are stating the **conditions under which you want the question to be displayed** (NOT the situation in which it should skip).



Validation Condition



You can minimize errors and ensure consistency by putting constraints in "Validate Condition" on the types of **answers** your users can submit. For example, when asking for a cellphone number, we may know that the cellphone number should be 10 digits long. So you can add a constraint that forces users to provide a 10 digit number. Where possible it also good practice to write a "constraint message" that lets the user know about the constraint. For example, in this situation the message could read "Cell phone number must be 10 digits!"

Advanced Tools: Hidden Value

You can use what CommCare calls a "hidden value" for complex calculations, amongst other things.

For example, let's say you have a question asking for a person's weight and a question asking for a person's height, and you want your form to calculate the person's BMI ($\text{BMI} = \text{weight} / \text{height}^2$). A hidden value can help you do this. Details about how to do this are available on the CommCare help site: help.commcarehq.org

Multimedia

Multimedia, such as images, audio, and video, can be very useful in an application for health workers- either to help the user navigate the forms, or to help in communicating health messages. If you already have materials that you want to convert into files on the phone, make sure that the files will look or sound good on the device, and field test is critical! There are lots of variables to consider- what type of voice to use, drawings versus pictures, cartoon videos versus actual film, and most importantly how the media will be used in the course of a counseling session or interaction.

Additional Resources

- Application Design best practices and suggestions: help.commcarehq.org
- General information about CommCare: www.commcarehq.org
- ICT4CHW Discussion Group: <http://groups.google.com/group/ict4chw>