

immune



immune™ is a vaccination-aid program, which **helps health care workers** retrieve the **vaccination schedule of any child**, administer shots and update a central database – all using a **smart phone** application and a pendant with an embedded **QR code**.

Raju lives in a slum in Jaipur, India.

His father pulls a Rikshaw and his mother works as a maid.

Raju's sister died at the age of 9 months without vaccinations.

His parents do not understand the **importance**.

Vaccination Problems

- **3 million children**, largely from developing countries, die each year because of vaccine preventable diseases.
- Recent reports suggest that nearly **34 million** children do not have current vaccinations – **98%** live in developing countries.
- Children vaccinated in India: **44% in urban areas; 22% in rural areas; and 2% in tribal areas.**

Smart phones can easily replace the current and inadequate paper-based ledger. With an APP, unique QR codes, and the use of a built-in camera, health care workers can edit the child's record instantly.



Cell Phone Usage

- By 2014, **100% of India's** population will have **access to cell phones.**
- Communication technology is rapidly **making life easier for people living below the poverty line.** Cell phone manufacturers like NOKIA are developing smartphones for emerging markets. Currently, a new, Android based **smartphone costs about \$90.00 USD in India.**
- Can we use **technology to help the community** health care worker operate in a **more efficient** way?



Design Opportunities

- Kids born to poor parents **wear many different ornaments** for both religious and other purposes. This project has modified the tradition to store a unique **QR code for identifying each child.**



Challenges

Job of a health care worker

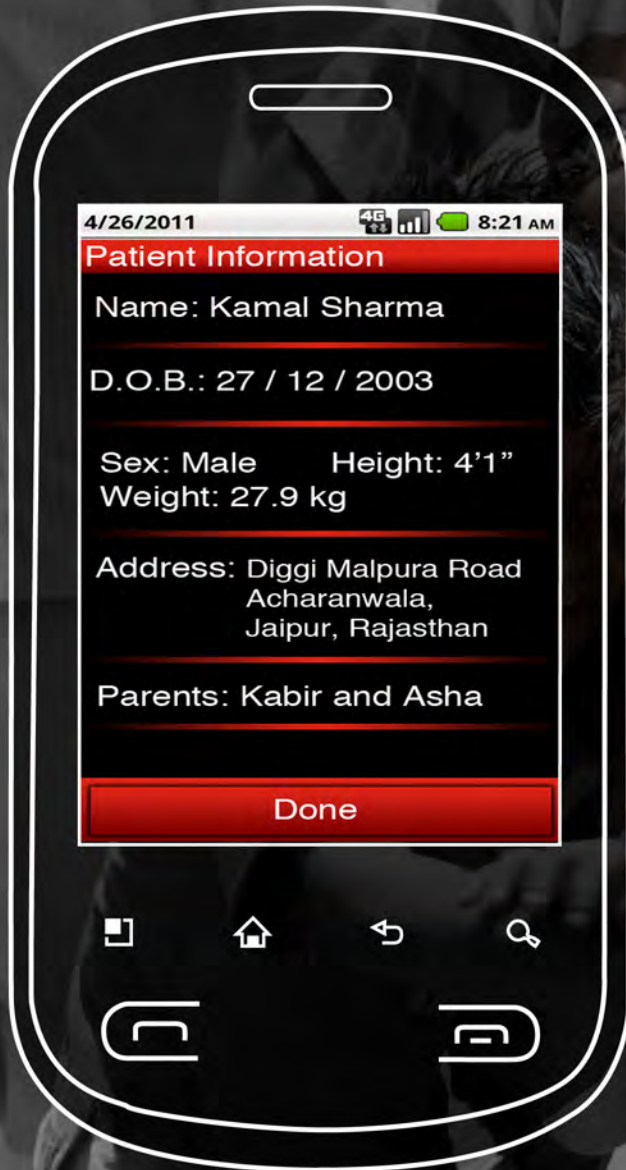
- The healthcare worker records shots and retrieves past records using an **antiquated, time-inefficient paper-based system.**
- The **patient/parents**, who in most cases are illiterate, must **save a health card in order to receive shots** in a timely manner.
- The health care worker **earns compensation** based on the **number of patients served.**

A simpler process will result in higher payment for health care workers and will increase the number of children receiving proper vaccinations



Patient Registration

Creating a new patient record.



Given an ID card.



Given a pendant.



Given a toy.



Given to mother.



Given to residence.



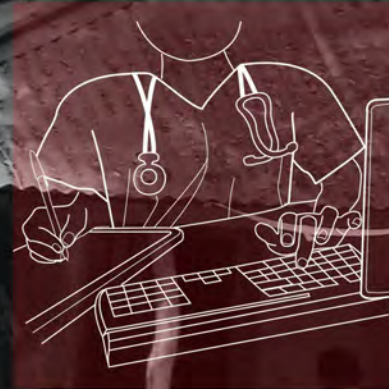
Given to father.

The **child receives multiple copies of a QR code**. All codes are already **pre-linked to the child's vaccination record** through the APP.

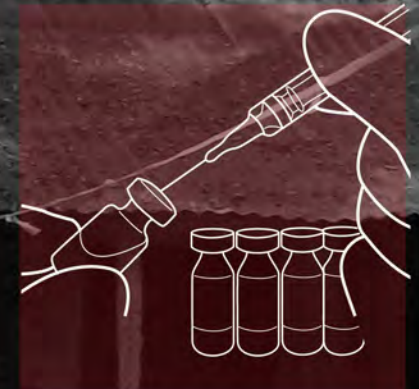


Health Care Worker Process

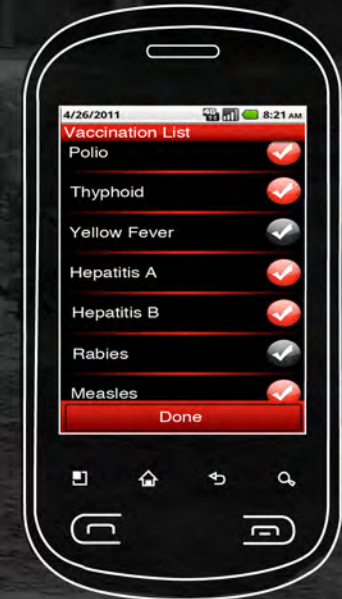
The **health care worker** arrives at a location, **carrying a smart phone and vaccinations** already prepared.



The **database provides** the exact number of **shots needed for a visit to** a particular area.



After **uploading a patient list**, the worker determines which vaccines will be needed during their trip by referring to **records uploaded by the phone APP**.



Update vaccination record.



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vaccination-aid program

- **We created working prototypes as well as an APP that runs on an android phone.** The proposal was presented to the Ministry of Women and Child Development in Rajasthan, India in December 2011. It is **currently being considered for a pilot run in a rural district** in the state. The **APP is free and available** under “Creative Commons” at www.id4learning.com
- **BMVSS (www.Jaipur foot.org),** an organization that provides free prosthetics for the impoverished in India has **requested a modified version of the system, which is currently under development.** The same system will be designed to help create records for the services they provide.