1. Motivation & Background

New cellular coverage in developing regions can facilitate mobile data collection in resource-poor areas.

In many developing regions voice and SMS coverage has boomed, but mobile web coverage lags behind. SMS is often the only viable data transport mechanism, but SMS is expensive and offers very small payload sizes.

2. User Populations

Rural community healthcare workers represent a group of users with limited exposure to cell phones but a high need for mobile data collection in areas without consistent cellular infrastructure.

As a representative example, the Integrated Management of Childhood Illness (IMCI) program is a public health protocol carried out by healthcare workers in the field. We need a cheap way for healthcare workers to report their activities (normally done through paper forms like the one above) to their coordinating hospitals.

3. Limitations of Existing Tools

Existing mobile data collection tools, such as JavaROSA(1), ODK(2) and FrontlineSMS:Forms(3), do not meet all the needs of the most resource-constrained settings. An ideal tool must:

1. Allow for structured data collection via a simple interface
2. Run on the lowest-end programmable phones
3. Maintain flexibility for form structure
4. Optimize for low cost data transmission

4. Mobile Medic

Mobile Medic is a Java application designed to be useful in developing regions given the current cellular infrastructure of those areas. The program:

1. Uses a menu-driven layout wherever possible to eliminate text input and soft key use
2. Runs on phones as inexpensive as Nokia Series 40 handsets ($40/unit, less in bulk)
3. Has an XML-defined form structure to allow for a wide range of form applications
4. Preferentially uses less expensive mobile web services where available, but aggressively compresses and aggregates form submissions to reduce cost of data transfer when SMS is used as a backing transport