

A conversation with Joey Savoie, May 17, 2017

Participants

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Note: These notes were compiled by GiveWell and give an overview of the major points made by Mr. Joey Savoie.

Summary

GiveWell spoke with Mr. Savoie of Charity Science Health as part of GiveWell's Incubation Grants work to support the creation of future top charities. Conversation topics included a general update on the progress of Charity Science Health's program of text message (SMS) reminders to improve childhood vaccine uptake in India, and details of data collection strategies.

General update

Overall progress

The main goal of the first year of the program was to find a viable, cost-effective means of collecting phone numbers at scale. Charity Science Health has found that subsequently delivering SMS messages is relatively straightforward. In three to six months, it expects to have tested all realistic strategies for collecting phone numbers except going through the government.

Charity Science Health hopes to collect 10,000 phone numbers by the end of 2017, though this number could be closer to 8,000. By the end of July 2018, the figure should be around 100,000.

Changes of plan

The program has undergone, or expects to undergo, the following significant changes:

1. A randomized controlled trial (RCT) of the program was originally planned for mid-2018, but is now more likely to happen towards the end of that year. This is primarily because sample size calculations suggest that far more phone numbers will be needed than originally expected. To detect a 3-5 percentage point difference with 90% confidence, a sample of at least 50,000 numbers is necessary.
2. Charity Science Health has become much more optimistic about working with state governments to collect phone numbers and basic demographic information, though this approach probably will not be pursued until after the RCT.
3. More staff are slowly being hired in India and fewer in Vancouver, Canada, where Charity Science Health is based. An office is being set up in Delhi.

4. This year, more time than expected has been spent on logistics, such as registration of the organization.
5. Just one A/B test of text message wording will be conducted in the next six months, rather than the two or three initially planned.

Cost-effectiveness analysis

Charity Science Health has recently updated its internal cost-effectiveness model. There are several sources of considerable uncertainty in its estimate, including:

1. **Costs:** The program's fully-loaded per-enrollee cost is not yet clear, and estimates have increased since the initial cost-effectiveness analysis. It will most likely be between \$0.25 and \$0.50, with only a small chance of rising above \$0.60. It is very unlikely to fall below \$0.25 unless the government is heavily involved.
2. **Effect size:** The model currently assumes a 3-5 percentage point increase in vaccination rates as a result of the program. However, there have been no studies of SMS reminders with strong generalizability to the India context, and the effectiveness in reported studies varies considerably, with some showing no effect.
3. **Disease incidence and case fatality rates:** There are no reliable figures for the incidence and case fatality of the vaccine-preventable diseases targeted by the program. Also, if children reached by the program almost always attend hospital when they fall ill, the effect of the program on child mortality could be minimal.
4. **Baseline vaccination rates.** In the states where Charity Science Health is planning to work, around 50-80% of children receive all recommended vaccinations, with high variance among estimates. The cost-effectiveness model uses a weighted average of figures from the National Family Health Survey (NFHS) and the Rapid Survey on Children (RSOC). The program is trying to target less wealthy hospitals and demographics, but their vaccination rate is still not likely to be below 50%.

Charity Science Health would be satisfied if its program turned out to be as cost-effective as the Against Malaria Foundation. If it were only comparable to GiveDirectly, the program would radically change direction or shut down.

A/B testing

Charity Science Health plans to use A/B testing to compare the effectiveness of a "plain" text message (along the lines of "Get your child vaccinated in five days") and one informed by behavioral science, perhaps appealing to authority (such as "Doctors recommend your child be vaccinated in five days").

Other health messages

Charity Science Health is exploring the possibility of using the phone numbers it collects to send other health-related messages relevant to new mothers, such as encouragement to breastfeed. Charity Science Health believes this is a very promising avenue as the cost of additional texts is very low.

Conversations with peer organizations

Charity Science Health has reached out to several development organizations that have experience with similar interventions, of which about half replied.

Key findings from these conversations included:

- Overall, these peer organizations were more positive than expected about working through governments, which has influenced Charity Science Health's plans.
- Most were inclined towards a more intensive intervention that would probably generate a larger effect size, but Charity Science Health is unlikely to pursue this option due to its lower expected cost-effectiveness.
- Some suggested using voice messages to help overcome the literacy barrier, but Charity Science Health considers this prohibitively expensive.

Charity Science Health has not yet asked peer organizations for suggestions of Indian organizations to partner with for data collection, and is not confident that it has found the very best partners for this.

Data collection

Number collection strategies

The program has considered five general models for collecting phone numbers and other data:

1. Buying lists of numbers.
2. Hiring staff to work directly in hospitals to collect numbers.
3. Partnering with Indian non-profits already using SMS vaccination reminders.
4. Partnering with data collection organizations that respond to a request for proposals (RfP). These would work with hospitals to collect phone numbers, then pass them to Charity Science Health.
5. Partnering with state governments, which would take responsibility for number collection (by paying hospitals to do it) then send them to Charity Science Health.

Buying numbers

Though very cheap per number, there are two major problems with buying lists of numbers:

- **Data quality.** It is best to get the numbers of women who have just given birth. Even if the information were just a year old, the messages would be poorly targeted and therefore less cost-effective.
- **Legality.** Spam regulation in India requires that SMS campaigns obtain explicit permission from recipients before sending them SMS messages.

This option is no longer being considered.

Direct implementation

To keep costs down, Charity Science Health has decided initially to work only through large hospitals that are able to collect and provide phone numbers and demographic and vaccination data. Of the approximately 40 hospitals contacted:

- About half were considered unsuitable, often because they were too small or catered to the wrong demographic.
- About 10 declined to participate. Some wanted to see the program operating effectively elsewhere before joining, and some required Charity Science Health to be registered in India, which is in progress.
- The remainder have been positive about the program and easy to work with, though progress has been slower than expected. Nearly four months after the initial contact, Charity Science Health is just now hiring staff for one hospital; the others are much further behind.

It should be clear in three to six months whether the hospital approach is working. No memoranda of understanding (MOUs) have been signed yet, but Charity Science Health believes the relationships will succeed, partly because other non-profits have successfully partnered with hospitals. While Charity Science Health is not concerned about partnerships falling through entirely, it anticipates that there may be longer than expected delays in program implementation when partnering with hospitals.

Partnering with other SMS non-profits

There are already NGOs in India using SMS reminders to improve vaccination uptake. However, Charity Science Health was unable to find any that were either performing so well that rigorous measurement and evaluation was unnecessary, or willing to undergo rigorous measurement and evaluation. Some potential NGO partners target populations with higher vaccine coverage than Charity Science Health would prefer.

Partnering with data collection organizations

The most promising partner organization so far is QRF, a data research non-profit that responded to an RfP. QRF has never worked on vaccination or text messaging, but this could be a strength as it has no vested interest in a positive result. It is experienced at collecting data and already has staff in several hospitals.

A six-month trial agreement between Charity Science Health and QRF began around April 2017. Using a \$10,000 grant from Charity Science Health (half of which has already been transferred), QRF will collect 6,000 numbers from three hospitals in Gujarat, submitting them weekly in an Excel spreadsheet. The first batch of numbers is expected by the end of May 2017. While Charity Science Health is confident this approach will work in the short term, it is not yet cost-effective. QRF may be able to reach \$0.50 per number at large scale. QRF currently only has access to about 10 hospitals, all of which are in one state.

A subsequent RfP, targeted at research and data collection organizations, resulted in a large number of applications. At least two NGOs seem promising, and one of those

has access to 85 hospitals. These NGOs quoted \$0.42 and \$0.37 per phone number acquired and claimed the cost could be halved at scale, in which case this approach would be less expensive than posting Charity Science Health staff at hospitals. Charity Science Health believes the quoted prices may be overly optimistic, but expects that these organizations are likely to collect numbers at lower cost than QRF, most likely just under \$0.50 at small scale. If agreements are made with these two organizations, they will start six-month trials at the end of May 2017.

It should therefore be clear in three to six months whether non-profit partnerships are promising.

Partnering with state governments

Charity Science Health has been advised by various experts that interventions sometimes perform less well after being taken over by governments. However, there are reasons to believe Charity Science Health could partner effectively with governments, with Charity Science Health maintaining the operations of the project while the government provides a database of phone numbers. A few officials have already responded positively to the idea after being connected to Charity Science Health by excited hospitals. Charity Science Health is considering hiring a government liaison to explore this avenue further. State governments would only be approached after the program had been successful in a few hospitals – probably after the RCT.

Collection time

Numbers would ideally be collected at birth, either from the father while the birth is taking place or from the mother afterwards. India has a high hospital birth rate due to the government's conditional cash transfer program, and a high rate of Bacillus Calmette–Guérin (BCG) vaccination at birth, whereas prenatal and postnatal visits are less consistent. Some hospitals suggested collecting numbers when parents come in for the first vaccination, but that population would have a much higher baseline vaccination rate.

Consent

Consent to receive messages is acquired at enrollment as part of a written enrollment form. Caretakers enrolling in the program can also give an alternate number in case the first is not working. Legally, this consent is sufficient; consent does not need to be obtained from the verified owner of a phone.

Language

The enrollment form asks for a preferred language. Charity Science Health is planning to send texts in a number of local languages.

Monitoring and evaluation

Charity Science Health asks partner hospitals and NGOs to collect data relevant to the program. Charity Science Health may also partner with data collection organizations, which also have their own validation processes; for instance, they will contact a random subset of acquired numbers to ensure that phones are

working and are associated with the right person. vRemind claimed 80-90% response rates, and survey companies such as Kantar reported over 75% (when multiple calls are made).

Charity Science Health's monitoring will be more intensive. Before starting to enroll parents, it would like to collect vaccination data for a few weeks to use as a baseline; this should give an early sense of whether the program is working, though findings may not be statistically significant. As well as using phone surveys to verify numbers, it should have direct access to medical records if it has staff members in the hospitals, allowing confirmation of immunization rates. It is also possible those staff would have enough time to call parents who miss an appointment, but their workload is not clear yet. The details of monitoring will be sorted out later; the focus is currently on number collection.

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