

# Arogya World mDiabetes

**Donors:** Aetna International, J&J, MSD India, Arogya World, The Hans Foundation/RIST, Lions Clubs and Lions International Foundation, Ambuja Cement Foundation

**Start date:** 2011

**Total number educated:** One million consumers (2011-2013) + 150,000 reached through 2019.

**Location:** India – all over the country

**Local partners or other organizations involved with the program:**

Initial Phase 2011-2013- Nokia, Emory University, Johnson & Johnson, Aetna, MSD India and Ipsos. Individual experts in Arogya's Behavior Change Task Force. Current Partners include The Hans Foundation/Rural India Supporting Trust, Aravind Eye Hospitals, Lions Clubs 317 (A) Bangalore and Lions International Foundation, BBMP, Ambuja Cement Foundation, IMI Mobile, Ipsos.



mDiabetes was designed as a population-level nationwide public health intervention using mobile technology to establish health behaviors known to prevent diabetes. It was a bold commitment made by Arogya World at the 2011 Clinton Global Initiative (CGI) Annual Meeting, and completed as promised in time.

Non-communicable diseases (NCDs), which include cardiovascular disease, diabetes, cancer, and chronic lung disease, are one of the 21st century's greatest health and development challenges. Globally, the rate of infectious diseases is decreasing and that of NCDs is increasing. NCDs cause seven out of ten deaths today, six times as many deaths as HIV/AIDS, TB, and malaria combined. Arogya World has focused on India specifically as the burden of NCDs, especially diabetes, there is massive and growing:

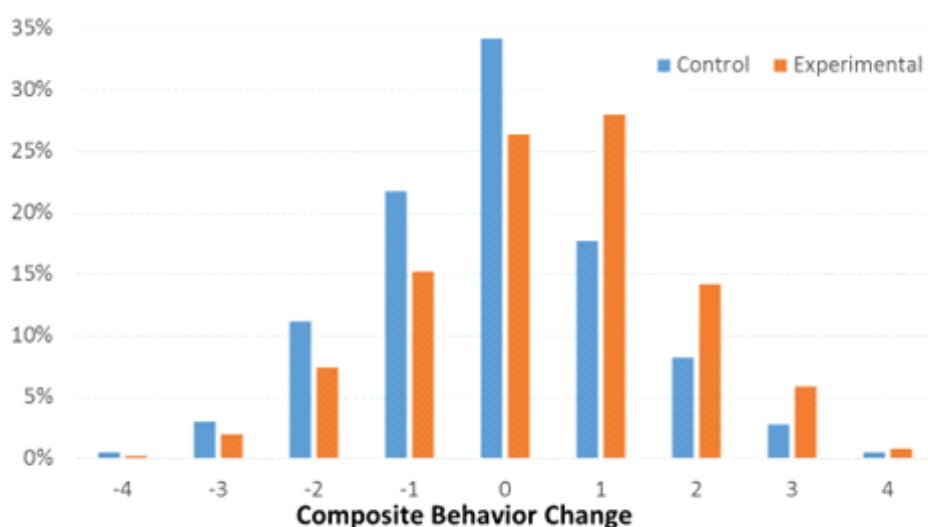
- India is home to 70 million people with diabetes
  - On average, Indians develop diabetes 10 years earlier than people in Western countries. Their age of highest risk is in the middle of their prime earning years;
  - Childhood diabetes rates in India have increased three-fold over the last 30 years;
- For a low-income Indian family with an adult that has diabetes, as much as 25% of the family's income may be devoted to diabetes care; and,

Mobile phones are widely used in India, throughout different geographic regions and socio-economic backgrounds. There are said to be about 900 million cell phone subscribers in India. It is well known that NCDs can be mitigated by adopting healthier behaviors. According to WHO, 80% of heart disease, 80% of diabetes and 40% of cancers are preventable with three lifestyle changes: avoid tobacco, eat healthy foods and increase physical activity. These are the reasons why Arogya World wanted to test the feasibility of using a text messaging intervention to deliver diabetes prevention messages.

Arogya World developed 56 text messages, based on science and behavior change theory, with Emory University, and then consumer-tested them in simulated conditions and in the real world with 750 consumers. Arogya World then refined the messages, adapted them culturally for Indian audiences based on consumer feedback and review by its Behavior Change Task Force, and translated them into 12 Indian languages. Nokia Life provided the translation and transmission infrastructure, and transmitted more than 56 million mDiabetes text messages, twice a week for six months to the one million consumers who opted in, in 2012 - 2013. The one million consumers came from all over the country, North and South India, and urban and rural India.

A behavior change study was conducted by Arogya World to assess effectiveness. A subset of about 1000 text message recipients were randomly selected to be the intervention group and a similar number of non-Nokia consumers were selected as the Controls. The nearly 2,000 study participants were asked by telephone survey about their health behaviors before and after they received the text messages. The study scored for fruit and vegetable intake, fat food intake and exercise.

The results of the study, published in the August 2016, Journal of Medical Internet Research, showed that the intervention group reported significantly greater improvement in their diabetes risk behaviors than the control group. Overall, the text messages resulted in a 20% improvement in health behaviors. That means 200,000 people had improved their health in 2011-2013 because of the mDiabetes program.



299/611 experimentals improved health behaviors; 185/635 controls improved health behaviors;  
<http://www.jmir.org/2016/8/e207/>

The success of mDiabetes validates the use of text messages to facilitate population-level behavior change in a low- and middle-income country. We know that NCDs are among this century's greatest health and development challenges, and Arogya World's mDiabetes shows promise as a cost-effective prevention intervention that can be easily deployed to large numbers of people. mDiabetes costs about \$.50 per person for message transmission.

mDiabetes costs < \$.50 per person for message transmission. Currently, with support from The Hans Foundation, we are working with Aravind Eye Hospitals to educate 300,000 consumers on diabetes prevention with text and voice messages. Implementation and impact analysis are ongoing. In addition we have started work with Lions Clubs and BBMP in Bangalore to educate 200,000 and with the support of Ambuja Cement Foundation we have just begun work to educate 200,000 villagers in several states. IMI Mobile is our message transmission partner.

