

Securing the Wellbeing of the Poor by Transforming Health Services using Crowd Sourcing

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Abstract

While health spending has increased dramatically around the world, access to affordable, quality services – without the risk of financial hardship – has lagged. At the same time, health systems are increasingly serving as buffers between vulnerable communities and crises, yet inadequate and ill- resourced national health systems lack the capacity to meet daily health needs, as well as anticipate, prepare for, and recover from health shocks down the line.[1]

Millions of people, throughout the world, suffer from various health problems — such as infectious diseases, malnutrition, and complications of childbirth

— simply because they are poor. Wide differences in health status between poorer and better-off people are often avoidable and unfair, reflecting different socioeconomic constraints and opportunities rather than different individual choices. And while governments have made strides in improving public health over the last several decades, many initiatives to improve the health of the poorest people have been unsuccessful.[2]

In this paper, we provide insights to securing the wellbeing of the poor by transforming health services using crowdsourcing. We also demonstrate a design for real-time assessment of patients using mobile with the help of crowdsourced information.

INTRODUCTION

Despite great improvements in humanity's health, the poorest people in the world still suffer under an intolerable burden of disease. An analysis of avoidable mortality suggests that most of this burden of ill health is due to a relatively limited set of conditions: maternal and perinatal mortality, vaccine-preventable diseases, acute respiratory infection and diarrhoeal disease in children, malnutrition that exacerbates those diseases, malaria, tuberculosis, tobacco-related disease, and HIV/AIDS. The second half of the twentieth century saw great improvements in the health of the world.

But the poorest billion people still suffer under an intolerable burden of illness.[4]

In recent years, new research has become available on health inequalities in developing countries. These studies shed light on how the world's poorest people are faring, demonstrating for the most part how persistent and pervasive health inequalities are.[2] Across the world, 1.3 billion people have no access to effective and affordable health care. Low and middle- income countries bear 93% of the world's disease burden, yet account for only 18% of world income and 11% of global health spending.[3]

Other research has assessed a variety of approaches to reducing health inequalities, including reforms in the way health care is financed and organized, improvements in the quality and accessibility of services, and broader community development.[2] Most of the conditions that afflict the poor people are amenable to health intervention, and interventions aimed at a small number of conditions could make a great difference. Effective public health systems are needed if these interventions are to reach the poor, and in the light of past progress, establishing and maintaining such systems is a feasible goal. However, it will require a new commitment in terms of resources and priorities both within low-and middle-income countries and in the wider global community.[4] And that is why crowdsourcing comes into the limelight - though untested, crowdsourcing can play a crucial role to improve the current health scenario amongst the poor people and provide a potential solution to the problem of opaque hospital costs. This paper illustrates the potential opportunities and challenges of crowdsourcing in the health care field and how it can be used to help the poor people to live a better and healthy life.

SOCIAL HEALTH IMPROVEMENT APPLICATION DESIGN

We created a mobile application that satisfies the regulations mentioned by Federal Food, Drug, and Cosmetic Act (FD&C Act). The application works with Text messaging or Short Messaging Service (SMS) as well as provides multimedia interface to work with. The application provides real time health monitoring for the patients. Data accumulation has been done using health checklist, risk evaluations, and registration from where the input was provided from user.



The application provides an interface through which user will receive SMS messages about their health appointments in nearby hospital. For more rural cases, User can provide inputs about their health information which will be evaluated by the respective doctors. The app also provides the facility to use audio, video and pictures to illustrate information from both end, users as well as doctors.



We conducted a survey with 20 participants, aged 36 on average, amongst which 20% were students, 40% were service persons and 40% were unemployed (annual income less than 2000 euro, mostly from Asia). Female participants were 60% and 40% were male participants.

The experiment was conducted by allowing the participants to input their details through the given interface. One of our team members played the part from doctors end and starts replying the queries depending upon the information's provided by the end users. Users on the other hand started to get information regarding health tips, general counseling via SMS on the mobile number they have provided as input earlier and through the designed interface, depending upon their choice of receiving information.

INTERFACE DETAILS



As it can be seen in the above given screen shot, the application works with five major functionality Registration of user, Check-up for children's which has one of the major part to play to improve social health, Referral Follow-up of already registered users, scheduled upcoming and previous Appointments related to a registered user and Government programs which are supposed to take place in near future. At the very beginning, user needs to register themselves in the process by choosing the '**Registration**' option. Once the user is registered into the system, they can use rest of the functionalities as and when required. The application works in multiple platform such as iOS, Android, Windows hence can be accessible via different mobile phones.

STRENGTHS

Compared to other available apps in the market, this provides automated information related to next check-up in rural areas as well, including doctor's availability. Information via SMS keeps women accountable for crucial checkups. Proper monitoring to improve new born baby's health can be done using the option '**Child Check-up**'. Due to its user friendly approach it allows community groups to implement & use without the help of trained professional. As the design of the app is based on Crowd sourcing hence the solution is relatively inexpensive. It is often noticed that solution from crowd is better than solution from a single person.

DESIGN LIMITATIONS

Due to the diverse people population it is always difficult to control the crowd. Different culture has different limitations. Few people still doesn't want to discuss personal health issues over a mobile application which can damage the process. As the experiment process was done based on few people hence it is still under observation for large audience. Future work will need to take the findings provided there and apply them in functioning, to create a better interactive system.

REFERENCES

- [1] <https://www.rockefellerfoundation.org/our-work/initiatives/transforming-health-systems/>
- [2] http://www.prb.org/pdf04/improvingtheHealthbrief_Eng.pdf
- [3] <http://www.global-economic-symposium.org/knowledgebase/the-global-society/financing-health-care-for-the-poor/proposals/improving-access-to-health-care-for-the-poor-especially-in-developing-countries>
- [4] <http://apps.who.int/iris/bitstream/10665/42488/1/9241590130.pdf>
- [5] https://healthit.ahrq.gov/sites/default/files/docs/citation/background_report_final.pdf