Financing, evaluation and mHealth initiatives for children—Can everyone be Captain Kirk?

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When he found himself in trouble, Captain Kirk of the Starship Enterprise would summon help by using his personal communicator. If the problem was medical, for example, he would talk into the device to get advice from the ship's surgeon.

The future imagined in the TV series 'Star Trek' is with us in the form of mHealth, shorthand for the practice of medicine and public health by mobile device—most commonly, mobile phones.

Especially in low- and middle-income countries, medical personnel and community health workers use mHealth to collect public and clinical health data, to deliver health-related information, to report individual patients' condition and to dispense advice or treatment.

About half the world's seven billion people subscribe to mobile services, according to the International Telecommunication Union. More than 70 percent of us have access to mobile phones, and the technology is rapidly spreading even the most remote corners of the world (1). And according to the international mobile operators' group GSM Association, there is "huge opportunity for future growth and a challenge to all players in the industry ecosystem to expand the scope of products and services to tap this demand."(2).

Mobile health technology offers a range of benefits for health programmes in the inaccessible regions of developing countries, primarily by making it possible to identify and address many health problems in real time and at a fraction of the cost of maintaining larger numbers of health workers or of transporting personnel and patients to be with each other. The rapid expansion of mobile infrastructure presents an extraordinary opportunity to bring health information and care to those of the world's 2.2 billion people younger than 18 who could most use it—including more than 400 million who live in the least developed countries.

Tens of billions of dollars are being invested in mobile phone markets in low-income countries. But how to balance industry's expectations of profit against the ability of people earning less than two dollars a day to pay for these mobile services? And if they can't pay, then who should? As the mHealth Alliance of funders and service providers noted in a report, reductions in cost and advances in network coverage are accelerating but the underlying business models to sustain this growth in lower-income markets are unclear.

Experience from pilot projects shows that a new individual venture in mHealth can be custom built and achieve some level of profitability. But applying these individual experiments on a large scale remains a long-term challenge (3).

Some other questions have been answered by *Schweitzera J (2012)* related to costs of mHealth infrastructure; regulatory structures that provide incentives at different levels of the health delivery system to encourage investment in, and use of, mHealth; and measuring the outcomes of successful mHealth utilization, including anticipated return on investment (4).

To motivate new users, institutions, enterprises and governments to adopt mHealth solutions, there must be significant value and a compelling reason to change. Current mHealth technology utilizes real-time voice communication and SMS services, but the applications are increasing with the advent of new mobile technology. New technology may allow for the capture, analysis, and transfer

of diagnostic images, sound, video or geolocation data (5).

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There are successful examples like Rainbow Stick project in Pakistan which used simple SMS text messages games for children who are encouraged to learn and then share health messages and in return receive a color ribbon for their rainbow stick (6).

Another project by name of Dial a Class allows 13 year old students to use smart phones test the air for carbon dioxide, particulate matter and noise pollution (7).

While mHealth has the potential to overcome traditional obstacles to the delivery of health services to the poor in lower and middle-income countries, such as issues related to access, quality, time, and resources, the evidence on whether the expected benefits and savings can be actualized on a large scale, needs to be gathered (4). Whittaker *et al.*, studying the process for the development and testing of mobile phone-based health, found several themes which can improve implementations of any mHealth project, such as integrity of the underlying behavior change theory, allowing for improvements on the basis of participant feedback, and a focus on implementation from the start (8).

Mobile technology is not waiting for answers to these questions. Even as we test the feasibility and uses of one application, new ones continue to emerge. We will have to move fast if we are to ensure a future in which every child can be a Captain Kirk, each with easy access to information and services with which to live long, healthy lives.

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Footnote

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