Case Study From Egypt
Mobile phones for mother and child care

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The focus of this article is to explore mobile phones as a tool for promoting maternal and child health in developing countries, including Egypt, a country cited by the World Health Report 2005 as having made significant progress in addressing maternal, newborn and child health (MNC). Over the past 20 years, great efforts throughout the world have been made to reduce fertility as well as maternal and infant mortality and morbidity and to improve the overall health outcomes and quality of life of women and children. Some countries, including Egypt, have been successful in their efforts due to significant investments in health systems, strengthening and raising awareness among the general population to encourage women to access antenatal and neonatal care services due to strong political will to meet the health needs of women and children. Others have struggled and even fallen behind in their attempts to meet the Millennium Development Goals for health. It is not surprising that alongside such improvements has emerged a significant boom in access to key information and communication technology (ICT) within the health sector as well as for health promotion in the general population, including mobile phones, radios, television and the Internet.

Health is both knowledge and communication based, whether considered in relation to the delivery of health services by health professionals, or in public health terms as the result of individual, family and community decisions about the way people live and behave. ICT in the health sector is the application of information technology to facilitate the delivery of appropriate health services to the populace. It has been recognised internationally and by the government to be of strategic importance as it facilitates the sharing of health data, information, knowledge and resources between the different stakeholders in the health sector. While efforts and good decisions allow for immediate and local responses to health problems, there remains an opportunity to link work being done at the national level to activities at the district level. Modes of data collection throughout most countries are not standardised and processes remain almost entirely manual—from the initial signing-in of a patient, to diagnosis and referral to the appropriate doctor or facility, to the healthcare delivery, and finally to the release of a patient. Health is profoundly affected by the application of ICT, which changes the way people can access knowledge and the way they communicate with one another in daily behaviour. So the governments around the world are embracing ICT tools for modernisation and development in the health sector of their country.

The flow of medical information and knowledge is shifting with increased access to the Internet, mobile phones and data retrieval systems. More and more the people are using these mediums of communication to get health information. These interactions with ICT and adaptations in behaviour, particularly as they pertain to public health, health service delivery and the social determinants of health have yet to be systematically assessed.

There are also very few conceptual frameworks that enable key stakeholders to understand the entire spectrum from the global to the local dimensions of technology development and marketing to its use at the household level and in this case for maternal and child health. This article is based on a framework developed for the UK Partnership for Global Health and the Nuffield Trust in 2002, entitled ‘Integrating Information and Communication Technology to Conceptual Framework’.

Beyond health services there are implications of familial relationships and support systems on how mobile phones contribute to extend the support structure network for women, particularly as they are increasingly not living within extended family households.

The focus of this article is to explore mobile phones as a tool for promoting maternal and child health in developing countries using Egypt, a country cited by the World Health Report 2005 as having made significant progress in addressing maternal and child health, as a case study. Information presented in this article is based on a qualitative study conducted by the author in Minia Governorate, Egypt in 2002-2003 on how mobile phone technology is directly and indirectly impacting health communication patterns among health professionals and lay subscribers in rural and urban communities.

Information and communication technology for health
There are many advantageous ways in which mobiles phones can be and are being integrated into communities in poor countries that are having an impact on health. In the research, health benefits are defined as both direct (e.g. improved access to health services, health promotion, lay health communication and emergency response) and indirect (e.g. improved access to economic and educational opportunities). This is done in accordance with the World Health Organisation definition of health as ‘a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.’

Egypt has the health infrastructure to integrate technology to better respond to the health needs of the people with specialised services and programmes for pregnant women, newborns, and children. It also claims to have 8 million of the world’s 1.52 billion mobile phone subscribers as well as an overall improvement in telecommunications through increased fixed line installations in a population of approximately 70 million. This improvement has been most significantly beneficial for the majority of the population who still live in rural areas. Globally, the numbers of mobile phone

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subscribers is also on the rise and so the benefits derived can also be applied elsewhere. Unfortunately apart from a limited number of pilot projects or individual applications there is little that is known about the true impact that mobile phones are having in maternal and child health. The following is a reflection on the key areas that emerged from the author’s study in which mobile phones are likely to be and can continue to contribute to the advances made in Egypt to address the health needs of women and children.

Mobile phones for maternal and child health

Many of the improvements in social and health indicators for Egypt are due to an improved economy in addition to significant investments in development (including health). The two main direct health benefits derived from mobile phones for maternal and child health include: 1) reduced response time to obstetric emergencies through the use of mobile phones to contact formal and informal means of medical transport and 2) consultation between health professionals, most relevant is between traditional birth attendants and nurse midwives and physicians regarding cases (teledicine). In terms of indirect benefits, these include 1) increased ability for women to work outside of the home resulting in increased household income, 2) savings in financial resources from transportation that is no longer necessary due to telephone access, and 3) increased education opportunities particularly for young women who are viewed as more important to have mobile phones than young men.

Coordination of emergency transport

Many of the discussions regarding the positive health impact of mobile phone use focused on reducing the risk of death and complications during childbirth. Home delivery was discussed by lay mobile phone users in rural areas as common practice that did not require medical professionals, except in extreme cases in which people have used mobile phones to mobilise assistance to be brought or to coordinate transport to transfer the women to more able health care workers. For peri-urban and rural respondents, the tangibly felt decline in number of births as well as increased numbers of women seeking medical supervision (mostly in cities) of pregnancy and delivery is also contributing significantly to reduced risk of mortality for women and newborns. Unfortunately in the case of Minia, the majority of women in child bearing years live in rural areas. Health professionals in urban areas are frequently visited and contacted by patients from villages which require over 3 hours of travel.

Interestingly enough, most respondents in rural areas do not contact local ambulance services which have been available for over 4 years, but rather arrange their own private transport to health facilities. For the isolated village which has a population of 13,000 people, the closest ambulance unit is considered to only serve the desert road and not their needs. In speaking with rural vehicle owners, who are also more likely to have mobile phones, many said that their experiences serving the role of informal medical transport. Some of them also discussed how they are consulted about which health service provider to go to for examination and treatment.

Telemedicine (local) and health service preparedness

While most health professionals limited their foray into the realm of information technology to mobile phones, there was a handful that discussed the use of other technologies. For informal health care providers, such as traditional birth attendants, known as dayas in the Egyptian context, newfound connectivity has been a bit more precarious. Dayas are viewed by many health professionals as peripheral, although they remain responsible for the majority of births in Minia Governorate.

For them consultation with health professionals has always been a sensitive subject as it somehow implies that they do not have the medical knowledge or expertise. However, with mobile phones shared that they have been on occasion summoned for assistance or consulted by dayas managing difficult deliveries. There is also a special program under development in Egypt as part of the Healthy Mother/Healthy Child Initiative to establish communication links through land-lines and mobile phones between dayas and local health professionals, maximising the improved telecommunication infrastructure.

Mobile phones and child health

Beyond health services there are implications of familial relationships and support systems on how mobile phones contribute to extend the support structure network for women, particularly as they are increasingly not living within extended family households. Most women prefer to contact their mothers or sisters when they require health-specific decision-making support when dealing with their own as well as their children’s health. Mobile phones increasingly are facilitating access to this guidance as well as consultations with physicians when higher level information is deemed necessary. In Egypt, one can also place orders by phone with pharmacies to deliver medicines-saving time to treatment for basic childhood illnesses. Application campaigns to distribute the polio vaccine are also being undertaken to increase immunisation campaigns in developing countries and disease surveillance. In the last year many of the last countries who have reported polio cases, mobile phones are facilitating the identification of and management of cases towards the final eradication of the disease expected in the coming few years. A movement from more individualised benefits to formal integration is necessary.

Conclusion

The impact of mobile phones on maternal, newborn, and child health in poor countries depends on whether it is achieved as a by-product of its general integration into society or through direct engagement. For areas where formal integration by the health sector has taken place a review of the objectives and the strategy can be evaluated and research can be undertaken to measure if the expected outcomes have been achieved. Indicators for health service management issues as well as individual quality of life assessments should be developed in order to ascertain what truly is happening with respect to the health of women and children rather than speculating about the potential and what should be happening.

References

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