

Chapter 16

Developing SMS Health Messages for Pregnant Indigenous Australians Using Persuasive Technology

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ABSTRACT

While developed nations search for solutions to pay for the increasing financial burden of healthcare, developing nations provide a way forward in the deployment of innovative healthcare. Mobile SMS programs are low-cost and effective in supporting health services. Having been successfully used to address lifestyle factors directly affecting maternal outcomes, such as: smoking, physical activity, nutrition, substance use and psychological stressors. Of primary importance in the development of SMS behavior change programs to support the maternal healthcare of Indigenous Australian women, is cultural appropriateness; specifically, the cultural notion of 'women's business'. In traditional Indigenous Australian culture, it is senior women who teach young women about maternal health and it is considered offensive for anyone other than a senior woman to instruct women on such matters. This discussion will consider the challenges in developing maternal healthcare SMS messages that aim to satisfy both the culturally sensitive requirements in addition to the medical requirements.

INTRODUCTION

While medical science has made some remarkable discoveries over the past two centuries, the cost of healthcare for most developed nations has been growing faster than GDP and is therefore unsustainable (World Economic Forum 2013). Over the past two decades, the economics indicate the long-term sustainability of the healthcare industry by government funding is not achievable using the current models of healthcare delivery. In most developed nations, healthcare costs are increasing faster than national income to a point where the healthcare industry is considered by some to be amongst the most wasteful

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sectors in the world (Harvard University, 2014; World Health Organisation [WHO], 2010; PricewaterhouseCoopers Health Research Institute, 2008). To pay for this increasing financial burden governments must deny funding to education, roads, and public safety, or eventually resort to increasing taxes.

There are also concerns for many people in developed nations being excluded from healthcare systems due to poverty, communication, ignorance and distance. Populations have increased, life expectancy has improved and the numbers of physicians and specialists have decreased (Sanabria, 2014). At the same time, the healthcare industry is reluctant to look outside its traditional approach to service delivery as such change undermines the power structures in governments, pharmaceutical companies, physician services and nursing systems (Thompson, 2012).

This is not a new problem; healthcare is not the first industry needing to improve quality and convenience while reducing costs. Neither is the health industry the first to resist change. In developing nations, where healthcare resources are low, innovative new models of healthcare are succeeding. These new models provide a way forward for developed nations in the healthcare delivery of tomorrow.

One such area needing improvement in Australia is Indigenous maternal healthcare. While much progress has been made in regards to Indigenous healthcare, it is essential that the Australia healthcare system continue to leverage existing technologies to reach people in need of care. In order to maximize the potential of mobile technology in the field of Indigenous maternal health, both cultural and medical requirements need to be integrated into the design methodology of the system. Specifically, this discussion will outline the issues surrounding a proposed low-cost SMS behavior change program, intended to inform and motivate Indigenous Australian women for positive pregnancy outcomes. This low-cost innovative healthcare model has proven effective in both developing and developed nations.

BACKGROUND

Healthcare Innovation

In Australia, Indigenous health expenditure was estimated to be \$4.55 billion in 2010–11, 3.7% of the total Australian health expenditure (Australian Institute of Health and Welfare [AIHW], 2013a). The average health expenditure per Indigenous Australian was \$7,995, compared with \$5,437 per non-Indigenous Australian (AIHW, 2013b). The Australian Government (44.8%) and the state and territory governments (46.6%) combined, funded 91.4% of the total health expenditure for Indigenous Australians in 2010–11. The non-government sector, which includes out-of-pocket payments by individuals, funded 8.6% (AIHW, 2013b). Health expenditure estimates for Indigenous maternal conditions in 2010–11 were \$144 million (AIHW, 2013a).

The cost of healthcare for Indigenous Australians compared to non-Indigenous Australians is not only more expensive but also the maternal health outcomes for Indigenous Australians are significantly worse than for non-Indigenous Australians (see next Section ‘Antenatal Care For Indigenous Australian Women’). An innovative system built on the principles of Indigenous methodologies may be well suited to the Indigenous Australian maternal healthcare setting.

In terms of cost savings to healthcare, Cannon et al. (2013) estimate the costs of inadequate antenatal care to remote Western Australian Indigenous communities. Their study modeled pregnancy events with adequate and inadequate care to reflect different outcomes. They reported the mean cost of pregnancy to be AUD\$8985. For adequate care, the costs were AUD\$7635 and for inadequate care AUD\$10,216. They

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