

# The use and management of information and technology in maternal healthcare: A case study in the Western Cape, South Africa

Vania Banze<sup>a</sup>, Bobby Moeng<sup>a</sup>, Cornell Stofberg<sup>a</sup>, Retha de la Harpe<sup>a</sup>, Mikko Korpela<sup>a,b</sup>

<sup>a</sup> Department of Information Technology, Cape Peninsula University of Technology, Cape Town, South Africa

<sup>b</sup> Healthcare Information Systems Research and Development Unit, University of Eastern Finland, Finland

## Abstract

Maternal healthcare is one of the Millennium Development Goal areas. In maternal healthcare, expecting mothers tend to visit a number of healthcare institutions and interact with the healthcare information systems throughout their pregnancy period. The interaction with different systems makes the management of patients and their data challenging. We present the first results of a study that aims at in-depth understanding of the use and management of information and technology in maternal healthcare in South Africa through a case study in Vredenburg, Western Cape.

## Keywords:

Maternal healthcare, Health services, Information flows, Information technology, Healthcare management

## Methods

The case was studied from three dimensions: health services, technology and management.

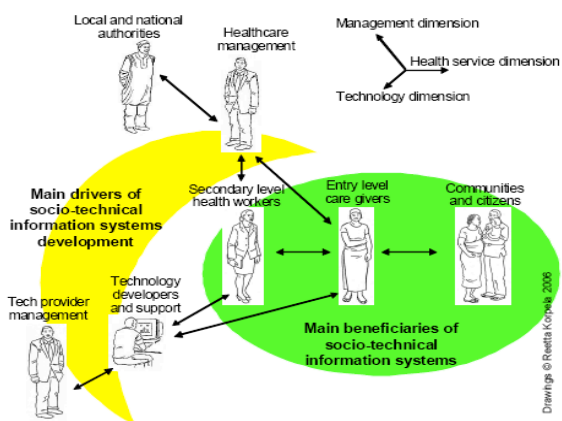


Figure 1 - Maternal healthcare dimensions

The case is situated in the town of Vredenburg which falls under the Saldanha Bay Municipality which in turn is part of the West Coast District Municipality in the Western Cape Province of South Africa. In Vredenburg there are two primary hospitals, Vredenburg Public and West Life Private,

as well as many private practices, run by general practitioners, gynaecologists and physical therapists.

In the first phase, the maternal healthcare process was described from the perspective of the general practitioner in the private sector. Data was collected by means of semi-structured interviews. Personas were used for describing the 'typical route' of a person through maternal healthcare.

## Results

A landscape methodology was used to depict the findings in the form of a diagram indicating four dimensions: organizations, stakeholders and services; structures of management; financial structures; and information flows and technologies.

Following the path of a pregnant woman through the maternal healthcare process, service points were identified. The service points of maternal healthcare in the private sector are West Life Private Hospital, specialists, general practices, pharmacies, laboratories, traditional healers, midwives and citizens. Within the hospital itself, the service points are the labour ward, theatre, and neo-natal ICU. These service points interact with one another either directly or indirectly through the patient that is moving from one point to the next.

A majority of general practitioners use a mix of traditional paper-based systems and electronic ones. The systems are becoming increasingly electronic, with paper limited to consultation times. Most of the electronic data capturing is done by the front-desk assistants.

## Conclusion

A case study was utilized for developing a methodology for describing essential aspects of maternal care paths particularly in Africa. The study provides a basis for future information system development to address the existing deficiencies in maternal healthcare, particularly those due to gaps in information flows. We suggest that similar studies in other contexts in South Africa and other countries can provide a deeper view of the variety and essence of maternal health and the role of information and technology within it globally.