

RESEARCH PAPER

# Improving computer-mediated synchronous communication of doctors in rural communities through cloud computing: A case study of rural hospitals in South Africa

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## ABSTRACT

This paper investigated how doctors in remote rural hospitals in South Africa use computer-mediated tool to communicate with experienced and specialist doctors for professional advice to improve on their clinical practices.

**Method:** A case study approach was used. Participants were purposively selected. Ten doctors were selected from ten hospitals in the North West Province. Data were collected using semi-structured open ended interview questions. The interviewees were asked to tell in their own words the average number of patients served per week, processes used in consultation with other doctors, communication practices using computer-mediated tool, transmission speed of the computer-mediated tool and satisfaction in using the computer-mediated communication tool.

**Results:** The findings revealed that an average of 15 consultations per doctor to a specialist doctor per week was done through face to face or through telephone conversation instead of using a computer-mediated tool. Participants cited reasons for not using computer-mediated tool for communication due to slow transmission speed of the Internet and regular down turn of the Internet connectivity, constant electricity power outages and lack of e-health application software to support real time computer-mediated communication.

**Conclusion:** The results led to the recommendation of a hybrid cloud computing architecture for improving communication between doctors in hospitals. Although this study had a limited number of participants, the findings were unexpected, and therefore, of interest to doctors who intend using computer-mediated tool to improve the performance of their clinical duties. It is also of interest to those who intend to implement e-health initiatives in rural hospitals in South Africa.

**Key Words :** Computer-mediated, Synchronous communication, Asynchronous communication, Cloud computing

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The delivery of healthcare services in Africa is severely affected by massive shortages of doctors, inadequate deployment of information and communication (ICT) infrastructure and unattractive incentives to doctors from universities who are deployed to remote rural hospitals in Africa. These doctors are often deployed to remote locations where access to knowledge sharing facilities to improve their work performance becomes impossible. Computer-mediated communication systems (e-mail, telemedicine system and video conferencing) which are Information and Communication

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