

AMERICAN
SCIENTIFIC
PUBLISHERS

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Printed in the United States of America

Advanced Science Letters
Vol. XXXXXXXXX

Electronic health record system for rural communities at Borneo Island

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Electronic health record system is crucial to promote health awareness in the rural remote places in Sarawak. It is able to record and monitor the personal health of each community member without being their physically. However, into what extends the EHR technology is relevant and applicable to rural communities in Borneo, Sarawak. This paper reviews the current EHR technologies in related to constraints environment within rural areas of Borneo, Sarawak. Work had been done to introduce an electronic health record system, Sympulse, to rural community, Sarawak two years ago. Although the project is pending due to some financial difficulties, we argue that the current EHR technologies are still inadequate to work in constraints environment. In this paper, requirements of a constraint based EHR system are reported. This is followed by details analysis and comparison of the proposed EHR system with others state of the art EHR technologies. From the findings, some research challenge and directions are elaborated. It can be served as a guideline to design and develop a constraint based EHR system.

Keywords: Electronic health record system, rural development.

1. INTRODUCTION

The widespread espousal of Information and Communication Technology (ICT) in healthcare has been rudimentary in less-developed countries. In many cases, technology is only relegated to simple and repetitive tasks such as medical records management and the related financial transactions [7]. The advancement of ICT however, has more to offer where its adoption can steer healthcare in new directions to improve overall patient wellness. One particular direction is encouraging self-care and self-health management. Particularly, electronic health records (EHR) can be proposed and implemented. An EHR can include immunization records, lab test results, radiology images, clinical photographs, appointments records as well as multimedia (audio, video) files [7]. These records can also be stored on centralized servers (cloud) or personal devices [10]. The ability to

access these records by authorized medical officers can then ensure improved delivery of care as well as reduction of medication errors. These can overall enhance health monitoring and surveillance [10]. Equally critical is the reduction of delay in health service coverage that can lead to lower expenses in health-care delivery [1]. EHRs can therefore be a crucial factor to improve the status quo in public healthcare services.

To date, lots of open source EHR systems have been developed and used by the community, namely VistA [3], OpenEMR [14], iTrust[2], MyOSCAR[15], PING [5], iSante[9]. However, into what extends the EHR technology is relevant and applicable to rural communities in Borneo, Sarawak. This paper reviews the current EHR technologies in related to constraints environment within rural areas of Borneo, Sarawak. Work had been done to introduce an electronic health record system to rural community, Sarawak two years ago. Although the project