



Evaluation of Electronic Health Information Systems in the Sri Lankan state health sector: A cross sectional study

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ABSTRACT

Introduction: Over the past years, the state health sector witnessed the development and deployment of many intuitional based, electronic Health Information Systems (eHIS) in Sri Lanka. These eHIS have been implemented with varying degree of maturity and some show the potential to be scaled-up. However, some initiatives had been limited to pilot implementations and failed to scale up for sub-national to national level. The objectives of the evaluation were to assess the scaling up potential of the eHIS, provide recommendations to the national digital health strategy and enlist the systems in a global digital health marketplace i.e. Digital Health Atlas, for higher visibility and review.

Methods: The MAPS toolkit was used as the primary evaluation tool, owing to its strong focus on digital health interventions scale-up. It was mapped with the eleven guiding principles of the National Health Information Policy strategic action plan which was assumed to be the closest available digital health strategy at the time of this evaluation, as there was no explicit digital health strategy for the country. Furthermore, the MAPS toolkit was logically mapped to the Principles for Digital Development for interpretation. The questionnaire was adopted with minor changes to suit local settings and validated by a panel of experts. The tool was administered to the managers of the currently implemented eHIS by three trained Interviewers. Data were randomly verified for quality assurance. Evaluated systems were enlisted in Digital Health Atlas, Sri Lanka country page.

Results: 22 data points of 18 exclusive systems participated in the evaluation. Majority of the systems evaluated had a national scope (75%), and a very few projects had a subnational (12.5%) and institutional level scope (12.5%) but implemented at the institutional level. Nearly 60% of them had a financial contribution from the Ministry of Health while 25% had both financial as well as human resources. Nearly 91% of the systems have tested their products for usability with anticipated user groups. Further 86% of the systems had a demonstrated efficacy with 96% stating that the system has demonstrated effectiveness. Therefore, it was assumed that the slow scale-up progress was due to implementation issues rather than usability issues. Majority of the systems had a formal partnership with the Ministry of Health/Government entities. However, the formal partnerships with implementing partners, technology partners and service providers were not up to the standards. The formal partnership with marketing (communications) partner and evaluation (or research) partner was not identified by many systems. Majority of the systems have considered potential economic costs for scaling up the eHealth project. Nearly 46% (22.7% documented) have identified the total cost of ownership over the next five years, to reach their projected scale. Another 46% (18.2% documented) have identified key elements of the cost associated with scaling up the project. With regards to strategic choices regarding partners who offer sustainable funding for scaling up, 41% (9.1% documented) have explored diverse funding streams. However, nearly 59% have not identified and mitigated risks for a transition plan which may have affected the scaling-up.

Conclusion: The enterprise-level digital health strategy and blueprint with action plan needs to be finalized to be able to address critical issues related to governance and monitoring of these systems. National level digital health governance mechanism needs to be resumed and re-established. Areas such as mechanisms for expanding human resource capacity and strategies for project team member retention should be strengthened further. A national enterprise level interoperability layer is a grave necessity. The enlisted systems in Digital Health Atlas can be case studies for the global community on Sri Lankan experience.

Keywords: Health information systems, HIS evaluation, MAPS toolkit, Digital health principles