Abstract

Title: A living lab based design strategy for ICT-based solutions for primary health care: Case study from India

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Background

Primary health care in low- and middle income countries (LMICs) has remained resource constrained, inadequately supervised, and less than optimally utilized. This fundamentally weakens health systems strengthening efforts. Therefore, we aimed to design appropriate ICT innovations for strengthening primary health care, within the changing demands of Universal Health Care (UHC), which involved health information systems radically different from what have traditionally existed.

Methodology

To address the challenge of inappropriately designed systems not reflecting the needs of the context, we established a living lab in the primary health clinic for which the systems were being built. A living lab provides an arena to build the system onsite and in-context, by enabling direct and ongoing interaction between the system developers and the health staff (nurses, supervisor, doctors) who would be the direct users of the system. As the system was introduced, the interaction also took place with patients coming to get care at the clinic.

Two open source platforms were used to design the integrated solution. The first was DHIS2 (District Health Information Software-2) to support the provision of community based services, for example to track TB patients over their cycle of care. The other was OpenMRS (Open Medical Record System) for supporting clinical services. The aim was to consolidate these two databases to cater to clinical and outreach care.

Results

Both the systems were designed and implementation and are currently in full use. Key results from this has been the following: i) about 60% of the catchment population are now registered in the two databases, and can be tracked for providing continuity of care; ii) a novel concept of a family folder is implemented, which can track health related dynamics for the family and also the individual; iii) the system is so designed to provide reports to support both clinical care and aggregate facility reports; iv) SMS features have been implemented to enable provision of health promotion and reminder messages to both the patients and care providers; and, v) we learnt about the challenges of integrating the DHIS2 and OpenMRS databases leading us to a new design strategy which would combine the OPD and outreach systems in only one platform – the DHIS2. Work is under process for this new platform, which will be tested out in another clinic.

Conclusions

The living lab has proved to be an effective strategy for HIS design for primary health care in resource constrained settings.