

Abstract

Introduction

Tuberculosis is a global public health concern and causes significant morbidity and mortality among affected communities. The end TB strategy has been declared by World Health Organization in 2014 to end the global TB epidemic by 2035. As the focal point of TB prevention and control activities in Sri Lanka NPTCCD adopt the end TB strategy and set up a national strategic plan to achieve that goal. To leverage TB control activities electronic Patient Information Management System was implemented island wide. Even though this system contains case-based TB surveillance data, its capacity to manage aggregated data is limited. To make sound decisions programme managers are dependent on the quality surveillance data. In this context, electronic Health Information Management has proven benefits. The objectives of this study were to review the existing reporting system of the NPTCCD and to design, develop, implement and integrate the aggregate TB management information system for NPTCCD and evaluate it.

Method

Phase one of the study consisted of a qualitative study which was conducted to assess the health information system of NPTCCD and gather user requirements for the Health Information Management System. During phase two, depending on the user requirement new HMIS was developed by customizing the DHIS2 instance installed at the NPTCCD server. Then this system was integrated with the existing ePIMS, and this enabled ePIMS to push aggregated data to DHIS2 based HMIS. Dashboards were incorporated into the HMIS for the visualization of real-time information. After one month of implementation, a study was conducted to evaluate the usability of the HMIS.

Results

The existing recording and reporting system was reviewed by participant observation and document analysis. User requirements were assessed by the interviews. 49 key indicators required to monitor TB control and prevention activities in Sri Lanka were able identified and used to design and develop metadata of the Health Management Information System. HMIS was successfully integrated with the existing ePIMS through an Application Programme Interface allowing ePIMS to push aggregated data. Usability assessment was conducted by end-user interviews and able to identify that integrated HMIS improve the

decision-making process of NPTCCD by enhancing information visualization and providing a flexible data analytic platform to analyse Tb surveillance data.

Conclusion

The routine reporting system of the NPTCCD needs to be regularly reviewed and restructure to capture newly emerging information requirements. Also, the Data quality assessment process should be incorporated into the electronic information system to ensure the quality of the data captured. This study has proved that the integration of clinical information systems with HMIS improve the decision-making capacity of the organization by enhancing data visualization and analytical process. So, this successful electronic information system integration was a practical example to prove the validity of the integration concept.