

SUMMARY

Background

This is an interventional research project carried out to improve report delivery system of the Clinical Bacteriology Laboratory (CBL) of Medical Research Institute (MRI), which is a National Reference Laboratory that provides services to the entire country. The intervention is carried out to overcome gaps in report delivery system including poor turnaround-time (TAT), which is a recognized gap when serving widely geographically-separated hospitals.

Aims

Aim of this study is to identify the gaps in present report delivery system at CBL of MRI, to design a suitable intervention to address the gaps and to assess the effectiveness of the process by improvements with a special reference to TAT that will lead to increased end user satisfaction and better clinical outcome for the patients.

Methods

Both qualitative and quantitative approach was used to study the process. Qualitative techniques were mainly used for gap identification and designing of the intervention. Quantitative methods were used for the assessment of effectiveness of the improvements. A continuous quality improvement package was designed with extensive literature review and full stakeholder participation.

Results

Qualitative findings confirmed delay in sample transport due to poor communication, lack of established mechanism and weak coordination between transport unit and wards. The paper-based report generation process is disorganized, unreliable and error-prone. The paper-based report delivery to Base Hospitals was dependant on incoming ambulance or government postal service. This system was delayed and poorly coordinated.

The interventions consisted of improving communication mechanism with transport division and wards by means of an internal circular. WHONET, a free windows based Laboratory Information System and database software, developed by World Health Organization for microbiology laboratories was introduced to generate reliable and accurate automated reports. Reports in pdf format were delivered to end users by secured email.

The end-users revealed timeliness, accuracy, quality and uniformity of reports and quantitatively, statistically significant ($p < 0.05$) improvement in TAT post-intervention.

Conclusion

The structured quality improvement package that was designed with stakeholder participation helped to improve the delay which is the main gap in our report delivery process. Automated report generation and electronic-based transmission was found to be feasible and effective solution in local setting. The end user satisfaction was found to be high with reference to timeliness of getting results, reduction of errors, completeness quality and uniformity of reports. At CBL of MRI the end users were mainly contented over the minimal documentation.

Key words

Microbiology report delivery, Turnaround time, WHONET, Laboratory information system, Medical Research Institute