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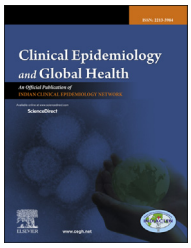

Original Article

Redesigning case selection methods to improve clinical review of inpatient medical records

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ABSTRACT

Background: The objective was to redesign selection criteria for readmission cases to improve pick up rates of adverse events* for clinical reviews of inpatient medical records using a new methodology.

***Adverse events:** An unintended injury or complication resulting in increased length of hospital stay, temporary/permanent disability/death, caused by healthcare management.

Level 1 AE's: Unpreventable events only for information of clinical departments.

Level 2 AE's: Preventable/potentially preventable events reported to Heads of clinical departments.[1,2a]

Trigger tools: The use of "triggers", or clues, to identify adverse events (AEs) is an effective method for measuring the overall level of harm in a health care organization.[2b]

PDSA: An iterative four-step management method used for continuous improvement of processes.[3]

Methods: Selected screening criteria were applied in a series of quality improvement cycles with further modification to eliminate unnecessary cases. A checklist to simplify screening was implemented and a staff satisfaction survey conducted to check process efficacy.

Results: Modification of selection criteria continuously improved review quality and accounted for better time management by the team.

Conclusion: The project resulted in a significant increase in the total AE pick up rate of 94.23% as compared to the baseline of 80%. The level 1 and 2 AE rates also increased to 92.31% and 1.92% from the baseline rates of 75% and 0.2%.

There was also noted to be a significant decrease of 80.98% in review time taken. These findings support the fact that an effective screening process for readmission review is beneficial and worth implementing.

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1. Introduction

The Clinical Review Program team (CRP) in the Singapore General Hospital is a patient centric quality improvement program that highlights and focuses the clinician's attention on issues related to patient safety for peer evaluation, recommendation and action. Level 2 issues that are picked up by reviewers are addressed by the departments concerned along with the medical board, and thus help in bringing about systemic changes in the hospital procedures and policies thereby improving the quality of clinical care offered to the patients.

The CRP team reviews patient medical records using a multi-stage review methodology to pick up adverse events. The primary review is done by a team of specially trained clinicians and nurses to identify the lacunae in the standard of care in the hospital. An analysis of adverse patient outcome is done in order to prevent future occurrences and bring about an improvement in patient care quality. The number of readmissions to acute care hospitals is huge, with numerous factors contributing to them and it is important for clinicians to gain an understanding of the possible preventable causes for readmission.[4]

This project was undertaken following the Ami (Accelerated model for improvement) program.[5]

The CRP team comprises of eight reviewers with a clinical background whose roles are to conduct case notes reviews of the selected flagged cases. The number of readmission cases in a month was about 900, making it difficult to sustain reviewing such large volumes of cases by the team, and this provided the impetus for this quality improvement project. The objective of this study was to reduce the total number of readmission cases for review and to increase the yield of total adverse events (levels 1 & 2), thereby increasing reviewer efficiency and satisfaction by eliminating unnecessary reviews. This time saved was utilized more effectively by reviewing cases flagged by other criteria, viz. Returns to the Operating theatre/ICU and Mortality cases, which was beneficial for the hospital as more AEs could be identified and resolved.

No similar studies have been documented in literature regarding Clinical Review Programs in any hospital and this could provide learning points for other teams to adapt or follow.

2. Methods

This study was conducted from January 2010 to June 2011 on inpatients readmitted to SGH within 30 days of discharge, across all wards and specialties. The number of readmission cases in a month was about 900. Previously all cases were reviewed to pick up levels 1 and 2 AEs, with pick up rates of 40% and 0.2% for level 1 and 2 cases respectively.

First, the January–December 2010 readmission review data was taken as the baseline data and rate of level 1 and 2 AE's picked up was calculated. Next, a series of exclusion filters was applied; these formed the 'Plan Do Study Act' (PDSA) cycles 1a, 1b and 1c. The cases without AE or with low yield of preventable or potentially preventable AE's were identified and were excluded from the study using general exclusion criteria, which included unscheduled unrelated readmissions, unscheduled related readmission after 15 days from discharge, scheduled related readmissions, social admissions, discharged against advice (AOR discharges).[6–8]

By excluding the above categories, cases with higher yield of preventable or potentially preventable AE's remained in the selection pool for this study.

PDSA cycle I a commenced using the exclusion criteria as shown in Fig. 1.

The next PDSA cycle, PDSA 2, applied the exclusion criteria as well as the screening of the Hospital Inpatient Discharge Summary (HIDS), which is a list of reasons for readmission summarized by the clinicians. The discharge diagnosis categories, shown in Fig. 1, were studied in detail. It was noted that these categories had a higher yield of AE's and it was more prudent to study these closely in order to get a better selection of cases with high yield AEs. Full case note review was done for all these cases and it was noted that those cases contained

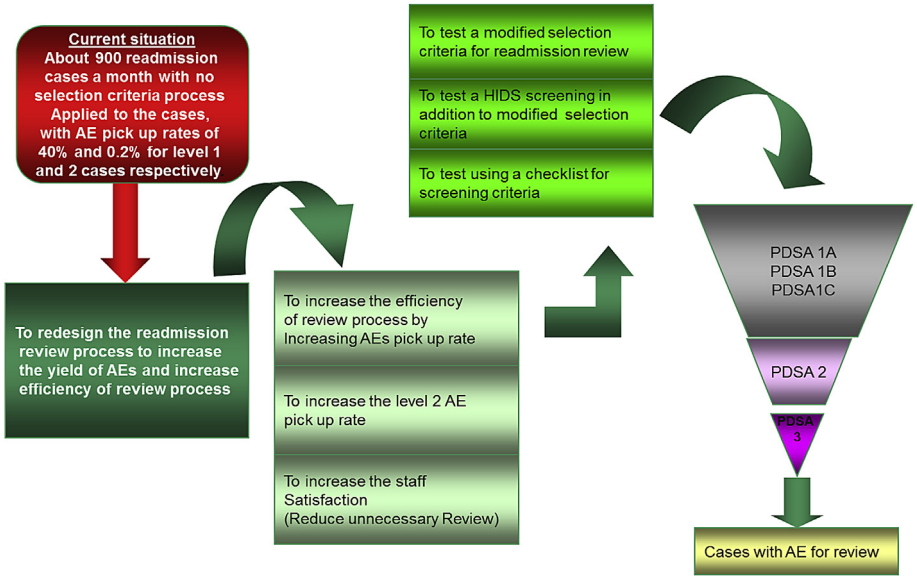

Fig. 1 – Review methodology.

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