
EHR Interventions Cut Hospital Readmissions



Hospital readmissions represent a major challenge for health systems worldwide, contributing to increased healthcare costs and adverse patient outcomes. With better integration of electronic health record (EHR) systems into clinical care, interest has grown in their potential to deliver interventions aimed at lowering readmission rates. To assess this potential, a systematic review and meta-analysis examined the effectiveness of EHR-based interventions compared with standard care in reducing 30-day and longer-term hospital readmissions. The review included 116 randomised clinical trials (RCTs) encompassing over 204,000 participants and aimed to clarify which EHR features and patient populations were associated with reduced readmission risk.

EHR Interventions and Study Characteristics

The review included only RCTs targeting hospitalised adult populations where interventions were delivered entirely or in part through EHR technology. Telemonitoring emerged as the most frequent component, followed by case management, medication reconciliation and telephone follow-up. The interventions were typically multifaceted and partially supported by healthcare professionals, often extending for more than 30 days. The studies spanned various countries, with a large proportion conducted in the United States. Participants had a mean age of 68 years and were most commonly admitted for heart failure. Across all studies, interventions were primarily synchronous and used EHR platforms for functions such as professional communication, alerts and monitoring.

Impact on Readmissions and Effect Modifiers

EHR-based interventions were associated with a statistically significant reduction in the odds of 30-day all-cause readmission (OR 0.83), as well as 90-day readmissions (OR 0.72), compared with control arms. These findings were supported by meta-analyses, despite high heterogeneity across studies. Subgroup and meta-regression analyses indicated that the interventions were more effective in older populations, in studies with a higher proportion of male participants and when the intervention involved fewer than three components. Interventions partially supported by health professionals, rather than fully managed by them, also appeared more effective. These insights suggest that EHR integration, coupled with a streamlined and collaborative care model, may optimise outcomes.

Must Read: [Enhancing Hospital Discharge to Prevent Readmissions](#)

Challenges, Limitations and Future Directions

Despite promising results, several challenges limit the generalisability and application of the findings. Most studies focused on heart failure and cardiology services, narrowing the scope of evidence. Additionally, many trials did not fully describe how the interventions were embedded into EHRs or which systems were used, limiting reproducibility. The definition of EHRs varied and was based on global criteria, which may have broadened inclusion but introduced inconsistency. Further, there was underreporting of longer-term outcomes and unplanned readmissions. These limitations underscore the need for standardised reporting and further research to identify which components of EHR interventions are most effective and how to adapt them for diverse populations and care settings.

The integration of EHR-based interventions into hospital care has demonstrated a potential to reduce short- and medium-term readmissions, particularly when interventions are tailored, patient-inclusive and streamlined. While further work is needed to refine and scale these strategies, the findings support the continued development and implementation of EHR-driven solutions to enhance care transitions and reduce preventable hospital returns. With thoughtful application and ongoing evaluation, EHR systems can become vital tools in improving health system performance and patient outcomes.

Source: [JAMA Network Open](#)

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