Identifying preventable readmissions: an achievable goal or waiting for Godot?

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Hospital readmission rates have captured the attention of policymakers, administrators, researchers and healthcare providers over the last decade. This has been spurred in no small part by the Hospital Readmissions Reduction Program, which began in the USA in 2012 and requires the Centres for Medicare and Medicaid Services to reduce payments to acute care facilities with high rates of readmission within 30 days of discharge for selected conditions. After years of intense research to find an objective measure of preventable readmissions, it seems as imminent as the arrival of Godot. Whether preventable readmissions can be objectively defined or represent a valid patient-centred measure of quality are unclear.

While the search continues for validated and objective measures of readmission, emerging commercial software programs using administrative data to flag potentially preventable readmissions (PPRs) are marketed as a solution to labour-intensive chart review. One example is the 3M Potentially Preventable Readmissions Grouping Software, a widely used proprietary program.[1] Using hospital administrative data, the program identifies readmissions with diagnoses that are 'clinically related' to the index admission and flags them as potentially preventable. Readmissions are risk-adjusted for case mix and severity of illness. Although the program has yet to be validated, its ease of use and promise of producing an objective measure of PPR have resulted in quick uptake by many organisations.

In their *BMJ Quality and Safety* publication, Borzecki *et al*[2] aim to determine whether the 3M PPR software can accurately identify preventable readmissions for pneumonia, one of the conditions with financial penalties for US hospitals with high readmission rates. Using administrative data from the US Veterans Affairs (VA) healthcare system, the researchers randomly selected 100 pneumonia readmissions for manual chart review. They developed a tool including four explicit quality measure domains related to admission work-up, in-hospital evaluation/treatment, discharge readiness and postdischarge period. Each domain received equal weighting and postdischarge information was available through the VA's comprehensive linked database. Using this tool, the investigators compared quality scores for cases flagged by the software as PPR (PPR-yes) and unavoidable readmissions (PPR-no). They found that PPR-yes readmissions actually had slightly higher-quality scores compared with those deemed as unavoidable, although the difference did not reach significance. Whether the cases flagged as PPR-yes truly represent real avoidable patient readmissions is unclear. As the authors note, their findings may indicate that PPR-yes cases are no more preventable than PPR-no cases. Alternatively, preventability assessment may require information outside the scope of health records. For example, assessing the quality of discharge instructions may require direct observation. These results give us pause when considering preventable readmission rates as a quality metric.

In the quest to reduce readmissions, considerable attention has focused on the definition of a *preventable* readmission. All-cause readmission rates are highly variable and subject to influence from factors that may be non-modifiable (such as disease progression). Making the clear distinction of readmissions that are preventable from those that are not is important to detect signals of improvement rather than the noise of unavoidable readmissions. However, attempts to define the preventability of readmissions may be biased. Studies using preventable

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readmissions as an outcome typically involve chart review by a clinician to determine 'preventability', a highly subjective and variable process. Not surprisingly, the literature reports a wide range of PPR rates ranging from 5% to 79%.[3] Even among skilled clinicians, there is low agreement on which readmissions are considered preventable.[4] This subjectivity of readmission preventability contradicts two defined domains of quality measures described by the Agency of Health Research and Quality: reliability (a measure must be reproducible irrespective of who or when it is made) and feasibility (a measure must have an explicit and measurable numerator and denominator).[5] Moreover, the complex interplay of factors associated with readmissions poses a barrier to fulfilling these two domains.

Despite the limitations of an objective definition of preventable readmissions, it is clear that at least some hospital readmissions can be attributed to suboptimal care transitions and can be viewed as a special form of adverse event. Early studies highlighting poor care coordination in the postdischarge period have fuelled the implementation of 'care transition bundles'.[6] [7] Even though gaps in postdischarge care coordination increase the risk of readmission, we contend that they likely account for only a small proportion. Indeed, a recent multi-centred randomised controlled study of an intensive care transitions intervention failed to demonstrate reduction in readmission rates.[8]

Perhaps the key question is not how to define a measure of preventable readmissions but whether it is an important patient-centred outcome. Indeed, patients may not view hospital readmission as adverse an outcome as do hospitals, payers and policymakers. In qualitative studies of patients readmitted to hospital, they reveal that patients often feel unprepared for discharge and want better access to integrated health services across the continuum of care.[9] [10] Rather than an outcome measure, readmission rates can be considered proxies of quality and subject to influence from multiple factors at patient, hospital and health system levels.[5] From the perspective of the patient, these measures may fail to address many possible modifiable risk factors for readmission, including psychosocial, environmental and financial determinants of health broadly described as *patient capacity*.[9] [11] From the perspective of hospitals and healthcare providers, enhancing patient capacity may be viewed as out of scope, yet inattention to this domain may weaken the effectiveness of many interventions in preventing readmissions. From a health system perspective, a comprehensive approach to identify and optimise contributors to readmission across the healthcare continuum involving practitioners at every level of care delivery is paramount to improving care. A true patient-centred measure of quality should account for all possible contributors and represent every perspective.

The lack of objective measures (and definitions) to identify preventable readmissions has not deterred hospitals from expending extensive resources on care transition interventions with significant opportunity costs. Unfortunately, these efforts have met with little success. Although researchers have attempted to devise 'readmission risk' calculators and indices, their practical use outside of research settings is limited. Despite years and extensive studies on readmissions, we are still waiting for the answers to our questions. The time has come to shift the focus of readmissions away from hospitals to a broader health systems approach. Rather than focusing on readmissions, preventable or otherwise, time may be better spent in developing quality care measures of complex disease management across a patient's continuum of care. This could include a matrix of structure, process and outcome measures such as integrated electronic health record, quality of patient education and counselling, and patient experience outcomes.

Of course, such measurement would involve considerably more effort than the current approach of simply measuring readmission rates using administrative data. However, Borzecki *et al* have shown that even very intensive and structured chart review does not identify quality differences between cases flagged by a widely used software program as likely PPRs. Further progress with the blunt measurements of readmission rates afforded by administrative data or even chart review thus seems unlikely. Just as many call for transformative change to increase coordination across sectors and improve patient-centred outcomes, we need transformative change for the performance measures themselves.

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