

## EDITORIALS

## The Successes and Challenges of Hospital to Home Transitions

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Hospital readmissions, which account for a substantial proportion of healthcare expenditures, have increasingly become a focus for hospitals and health systems. Hospitals now assume greater responsibility for population health, and face financial penalties by federal and state agencies that consider readmissions a key measure of the quality of care provided during hospitalization. Consequently, there is broad interest in identifying approaches to reduce hospital reutilization, including emergency department (ED) revisits and hospital readmissions. In this issue of the *Journal of Hospital Medicine*, Auger et al.<sup>1</sup> report the results of a systematic review, which evaluates the effect of discharge interventions on hospital reutilization among children.

As Auger et al. note, the transition from hospital to home is a vulnerable time for children and their families, with 1 in 5 parents reporting major challenges with such transitions.<sup>2</sup> Auger and colleagues identified 14 studies spanning 3 pediatric disease processes that addressed this issue. The authors concluded that several interventions were potentially effective, but individual studies frequently used multifactorial interventions, precluding determination of discrete elements essential to success. The larger body of care transitions literature in adult populations provides insights for interventions that may benefit pediatric patients, as well as informs future research and quality improvement priorities.

The authors identified some distinct interventions that may successfully decrease hospital reutilization, which share common themes from the adult literature. The first is the use of a dedicated transition coordinator (eg, nurse) or coordinating center to assist with the patient's transition home after discharge. In adult studies, this "bridging strategy"<sup>3,4</sup> (ie, use of a dedicated transition coordinator or provider) is initiated during the hospitalization and continues postdischarge in the form of phone calls or home visits. The second theme illustrated in both this pediatric review<sup>1</sup> and adult reviews<sup>3-5</sup> focuses on enhanced or individualized

patient education. Most studies have used a combination of these strategies. For example, the Care Transitions Intervention (one of the best validated adult discharge approaches) uses a "transition coach" to aid the patient in medication self-management, creation of a patient-centered record, scheduling follow-up appointments, and understanding signs and symptoms of a worsening condition.<sup>6</sup> In a randomized study, this intervention demonstrated a reduction in readmissions within 90 days to 16.7% in the intervention group, compared with 22.5% in the control group.<sup>6</sup> One of the pediatric studies highlighted in the review by Auger et al. achieved a decrease in 14-day ED revisits from 8% prior to implementation of the program to 2.7% following implementation of the program.<sup>7</sup> This program was for patients discharged from the neonatal intensive care unit and involved a nurse coordinator (similar to a transition coach) who worked closely with families and ensured adequate resources prior to discharge as well as a home visitation program.<sup>7</sup>

Although Auger et al. identify some effective approaches to reducing hospital reutilization after discharge in children, their review and the complementary adult literature bring to light 4 main unresolved questions for hospitalists seeking to improve care transitions: (1) how to dissect diverse and heterogeneous interventions to determine the key driver of success, (2) how to interpret and generally apply interventions from single centers where they may have been tailored to a specific healthcare environment, (3) how to generalize the findings of many disease-specific interventions to other populations, and (4) how to evaluate the cost and assess the cost-benefit of implementing many of the more resource intensive interventions. An example of a heterogeneous intervention addressed in this pediatric systematic review was described by Ng et al.,<sup>8</sup> in which the intervention group received a combination of an enhanced discharge education session, disease-specific nurse evaluation, an animated education booklet, and postdischarge telephone follow-up, whereas the control group received a shorter discharge education session, a disease-specific nurse evaluation only if referred by a physician, a written education booklet, and no telephone follow-up. Investigators found that intervention patients were less likely to be readmitted or revisit the ED as compared with controls. A similarly multifaceted intervention introduced by Taggart et al.<sup>9</sup> was unable to detect a difference in readmissions or ED revisits.

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It is unclear whether or not the differences in outcomes were related to differences in the intervention bundle itself or institutional or local contextual factors, thus limiting application to other hospitals. Generalizability of interventions is similarly complicated in adults.

The studies presented in this pediatric review article are specific to 3 disease processes: cancer, asthma, and neonatal intensive care (ie, premature) populations. Beyond these populations, there were no other pediatric conditions that met inclusion criteria, thus limiting the generalizability of the findings. As described by Rennke et al,<sup>3</sup> adult systematic reviews that have focused only on disease-specific interventions to reduce hospital reutilization are also difficult to generalize to broader populations. Two of the 3 recent adult transition intervention systematic reviews excluded disease-specific interventions in an attempt to find more broadly applicable interventions but struggled with the same heterogeneity discussed in this review by Auger et al.<sup>3,4</sup> Although disease-specific interventions were included in the third adult systematic review and the evaluation was restricted to randomized controlled trials, the authors still grappled with finding 1 or 2 common, successful intervention components.<sup>5</sup> The fourth unresolved question involves understanding the financial burden of implementing more resource-intensive interventions such as postdischarge home nurse visits. For example, it may be difficult to justify the business case for hiring a transition coach or initiating home nurse visits when the cost and financial implications are unclear. Neither the pediatric nor adult literature describes this well.

Some of the challenges in identifying effective interventions differ between adult and pediatric populations. Adults tend to have multiple comorbid conditions, making them more medically complex and at greater risk for adverse outcomes, medication errors, and hospital utilization.<sup>10</sup> Although a small subset of the pediatric population with complex chronic medical conditions accounts for a majority of hospital reutilization and cost,<sup>11</sup> most hospitalized pediatric patients are otherwise healthy with acute illnesses.<sup>12</sup> Additionally, pediatric patients have lower overall hospital reutilization rates when compared with adults. Adult 30-day readmission rates are approximately 20%<sup>13</sup> compared with pediatric patients whose mean 30-day readmission rate is 6.5%.<sup>14</sup> With readmission being an outcome upon which studies are basing intervention success or failure, the relatively low readmission rates in the pediatric population make shifting that outcome more challenging.

There is also controversy about whether policymakers should be focusing on decreasing 30-day readmission rates as a measure of success. We believe that efforts should focus on identifying more meaningful outcomes, especially outcomes important to patients and their families. No single metric is likely to be an

adequate measure of the quality of care transitions, but a combination of outcome measures could potentially be more informative both for patients and clinicians. Patient satisfaction with the discharge process is measured as part of standard patient experience surveys, and the 3-question Care Transitions Measure<sup>15</sup> has been validated and endorsed as a measure of patient perception of discharge safety in adult populations. There is a growing consensus that 30-day readmission rates are lacking as a measure of discharge quality, and therefore, measuring shorter-term—7- or 14-day—readmission rates along with short-term ED utilization after discharge would likely be more helpful for identifying care transitions problems. Attention should also be paid to measuring rates of specific adverse events in the postdischarge period, such as adverse drug events or failure to follow up on pending test results, as these failures are often implicated in reutilization.

In reflecting upon the published data on adult and pediatric transitions of care interventions and the lingering unanswered questions, we propose a few considerations for future direction of the field. First, engagement of the primary care provider may be beneficial. In many interventions describing a care transition coordinator, nursing fulfilled this role; however, there are opportunities for the primary care provider to play a greater role in this arena. Second, the use of factorial design in future studies may help elucidate which specific parts of each intervention may be the most crucial.<sup>16</sup> Finally, readmission rates are a controversial quality measure in adults. Pediatric readmissions are relatively uncommon, making it difficult to track measurements and show improvement. Clinicians, patients, and policymakers should prioritize outcome measures that are most meaningful to patients and their families that occur at a much higher rate than that of readmissions.

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