Parent and Provider Perspectives on Pediatric Readmissions: What Can We Learn About Readiness for Discharge?

Mark Brittan, MD, MPH,*† Karen Albright, PhD,*† Maribel Cifuentes, RN,* Andrea Jimenez-Zambrano, MPH,* Allison Kempe, MD, MPH,*†

ABSTRACT

BACKGROUND: Readmissions are an increasingly recognized quality metric that will likely affect payments to children’s hospitals. Our aim was to inform future efforts to reduce readmissions by eliciting parent and provider perceptions of pediatric readmissions.

METHODS: We interviewed English- and Spanish-speaking parents and inpatient providers of children with medical diagnoses who had unplanned readmissions (≤7 days). Parents were interviewed one-on-one during the readmission. Providers were interviewed in person or by phone within 1 week of the patient’s second discharge. Interviewees were queried about their perceptions of the reason for readmission and whether the readmission was preventable. Interview transcripts were analyzed using qualitative content methods. Code categories were developed and emergent themes independently identified by 2 analysts.

RESULTS: The study included 30 readmitted children (median age 17 months, 70% male, 80% White or Hispanic, and 66% publically insured). We interviewed 30 parents (23% Spanish speaking) and 27 discharging or readmitting providers. Parents and providers identified several major factors as causing readmissions, including child related (health and symptoms), parent/family related (adherence to recommended care), provider/team related (medical management), communication difficulties, home supports, and quality of discharge teaching. Parents and providers had differing interpretations of the role or magnitude of these factors. Lack of shared understanding between parents and providers emerged as a potentially important cause of readmissions.

CONCLUSIONS: We identified lack of shared understanding and communication difficulties between parents and providers as potential causes of readmission. Further research is needed to determine if improvements in identifying and addressing such problems can reduce pediatric readmissions.
Readmissions are an increasingly recognized quality metric that will likely affect payments to children’s hospitals.\(^1\) Initiatives to reduce readmissions may therefore benefit quality of care and improve reimbursements. Clinicians and payers are interested in learning about potential risk factors for readmissions as a way to target high-risk patients for intervention.\(^2\)\(^-\)\(^4\)

Parents of hospitalized children have identified a range of problematic transitional issues, including inadequate discharge teaching, anxiety about finances and transportation, and isolation from the medical and professional help available in the hospital.\(^5\)\(^-\)\(^7\) Because inpatient pediatric providers do not necessarily recognize these difficulties,\(^8\)\(^,\)\(^9\) it is important to better understand whether these identifiable and potentially addressable problems lead to readmissions.

The goal of this study is to explore and compare parent and health care provider perceptions regarding causes of unplanned pediatric readmissions. A qualitative approach allows deeper investigation via stakeholder perceptions, of everyday life, psychosocial or socioeconomic problems, and systems failures.\(^10\) Comparing the views of health care providers with parents allows for a more comprehensive understanding of readmissions. Findings from this study may provide insights and suggest testable hypotheses that are not apparent through use of other research methods.

**METHODS**

**Study Setting**

This study occurred at Children’s Hospital Colorado (CHCO), a 413-bed freestanding tertiary care teaching hospital with >16,000 yearly admissions. The Colorado Multiple Institutional Review Board approved this study.

**Study Population:**

We prospectively enrolled English- and Spanish-speaking parents or legal guardians (hereafter referred to as parents) and inpatient healthcare providers of 30 readmitted children between November 2011 and August 2012. We included children who were readmitted within 1 week of hospital discharge from a hospitalist or medical subspecialty service (including the pulmonary and gastrointestinal services). The sample was limited to children with the following index hospitalization discharge diagnoses: asthma, gastroenteritis/dehydration, pneumonia, viral illness, bronchiolitis, seizures, cellulitis, urinary tract infection/pyelonephritis, and type I diabetes. These diagnoses combine medical conditions for which children are most often hospitalized,\(^11\) and some of those most commonly associated with avoidable hospitalizations.\(^12\) We included children with underlying medical complexity who were admitted for these illnesses or related symptoms. Psychiatric and surgical patients were excluded because these populations are likely to have additional or differing risk factors for readmission.

All attending physicians and pediatric nurse practitioners who provide inpatient medical or medical subspecialty service at CHCO were eligible to participate in the study.

**Study Design**

Readmitted children were prospectively flagged using daily reports generated from the hospital’s electronic medical records. We piloted potential interview questions with a small sample of parents (but not providers) of readmitted children before actual enrollment. After enrollment began, a research assistant identified potentially eligible children through the daily readmissions report. One of the investigators (MB) reviewed the index admission history to ensure that the patient qualified on the basis of the admission diagnosis. Eligible parents and providers were invited to participate using standard consent procedures. Parents, but not providers, received a gift certificate for participating. A research assistant fluent in English and Spanish and with experience conducting semistructured interviews interviewed parents one-on-one, in the patient’s room, during the readmission. Providers were interviewed in-person or by phone within 1 week of the patient’s second discharge. Interview guides were developed by the primary investigator (MB) after close reading of the literature on care transitions and readmissions. Questions were designed to assess participant’s perceptions of the discharge and transition process hypothesized or reported to be relevant to readmissions. Questions prepared for parents and providers broached the same domains but were phrased differently to appropriately elicit the parent’s or provider’s perception. The question domains included parent/family readiness for discharge, discharge instructions, prescription medications, outpatient follow-up, medical equipment, psychosocial/resources, and parent’s response to the child’s deteriorating condition. Parents and providers were queried about their perceptions of the reason for readmission and whether the readmission might have been prevented. Parents were asked a series of demographic questions at the end of their interviews. Digitally recorded interviews were transcribed verbatim by a professional transcription service.

**Data Analysis**

Patient demographic and clinical data were drawn from review of patient medical records. Parent demographic information was gathered from interview responses. One of the investigators (MB) reviewed each child’s chart to determine if the patient had underlying medical complexity. Feudtner’s theoretical framework of complex chronic conditions (if the condition was expected to last >12 months, involved either several organ systems or 1 organ system severely enough to require specialty pediatric care),\(^13\) as well as dependence on technology or medical devices was used to guide this determination. Qualitative content analysis commenced shortly after the study began to inform data collection and modify interview questions, if necessary, although none were modified. Two investigators analyzed interview transcripts. Through iterative readings of interview transcripts and use of ATLAS.ti version 6.2 (Scientific Software Development, Berlin, Germany), the analysts independently developed coding categories, applied these to interview transcripts, and then identified emerging themes.\(^14\)\(^,\)\(^15\) Although reading of
parent and provider transcripts for each patient occurred in tandem, themes were developed separately for parents and providers (not for each parent-provider dyad). Analysts held 4 separate meetings to reach consensus about code categories and emerging themes. In determining preventability, we considered readmissions to be perceived as potentially avoidable if the participant indicated that the readmission was possibly, probably, or definitely avoidable. Preliminary results of the analysis were reviewed by members of the research team and a convenience sample of 5 parents of readmitted children not included in the study to assess comprehensiveness of derived themes.

RESULTS

Thirty-eight children were eligible for inclusion and 30 were included in the study. We excluded 8 children whose parents were not present for consenting (n = 5) or whose parents declined to participate (n = 3). We interviewed 1 parent and at least 1 provider for each child included in the study. We were able to interview 2 providers for 12 of the 30 children included in the study. Table 1 shows patient, parent, and provider characteristics, and Table 2 provides examples of index admission diagnoses and conditions/diagnoses suggesting underlying medical complexity.

Parents perceived 14 (47%) readmissions to be potentially preventable, and providers perceived 12 (40%) readmissions to be potentially preventable. Parent and provider perceptions of preventability only overlapped for seven readmissions.

Parents’ Explanations for Readmissions

Several themes emerged among parents of readmitted children. First, some parents believed that their child’s symptoms were not sufficiently alleviated or improved before discharge. This was reported by parents of children with and without underlying medical complexity. In the words of one parent, “They needed to make sure that his diarrhea was gone before he was discharged.” According to another parent, “I kept telling them that my girl was not okay, that she was coughing, and he kept telling me that she was going to be fine. But I felt she was not going to be okay.”

Second, some parents reported that their child’s initial illness had not been sufficiently evaluated or treated by the medical team. One parent felt that the cause of readmission was due to “the lack of testing, for any sort of clear picture in that admission.” As a result, parents indicated that readmissions could have been averted by keeping the child hospitalized longer, further investigating or testing for the true cause of illness, or starting different treatments (typically antibiotics). Fourteen parents felt that their child had not stayed long enough during the first admission. A few parents of children with chronic symptoms reported that they had grown frustrated with the lack of satisfactory explanation for their child’s condition. As one parent said, “for me it’s frustrating as a mother to have a baby for 4 months and no one can tell you what’s wrong with him.” Although several parents indicated that longer initial hospitalization would have prevented readmission, a few parents revealed that they had requested early discharge due to frustration with lack of diagnostic or treatment progress, aversion to prolonged hospitalization, or concerns about the child’s emotional well-being. One parent mentioned that “the reason we tried to leave early was because he [the patient] is so resistant to the hospital environment.” Another parent explained:

I was the one that said if you guys aren’t going to do anything for me and he’s just sitting in the hospital and you’re charging my insurance company, we might as well go home because they literally weren’t doing anything.

Third, some parents indicated that the team had either ignored their concerns about being discharged or persuaded them to feel differently. As one parent noted, “I told them I didn’t feel ready, but they said his oxygen was fine and he seemed okay so we’re going to go ahead.” The parents of 2 medically complex children reported that they had disclosed to the care team intuitive feelings that something, objectively immeasurable, was not right with their child at the time of discharge. These parents indicated that the readmission might have been prevented had the team taken their intuitions seriously.

The mom’s gut matters so much more than all the textbooks and all the education in the world. When you have a continuously ill child like this, it just seems like that needs to be respected a little bit more.

In contrast, a parent described an example of effective communication that facilitated shared understanding between the team and provider:

My daughter has spinal muscular atrophy, and you have to be taking care of this differently than you would a normal patient. I felt like that part was being overlooked. We did sit down and

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<th>TABLE 1 Participant Characteristics</th>
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<td>Patients (N = 30)</td>
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<td>Range</td>
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<tr>
<td>Female</td>
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<td>Male</td>
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<td>Race/ethnicity</td>
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<td>Other</td>
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<td>Public insurance</td>
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<td>Private insurance</td>
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<td>Medically complex</td>
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<td>Parents (N = 30)</td>
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<td>Median age</td>
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<td>Provider interviewed</td>
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<td>Father</td>
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<td>Grandparent</td>
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<td>Spanish speaking</td>
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<td>English speaking</td>
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<td>Education</td>
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<td>High school or less</td>
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<td>Some college or more</td>
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<td>Providers (N = 27)</td>
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<td>Physician</td>
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<td>Nurse practitioner</td>
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talk to the doctor and explain our feelings and after that, everything was perfect.

A few parents described ambiguous comfort levels with discharge but were reluctant to disclose their anxieties because of uncertainty, conflict with the care team, or embarrassment:

I wasn’t totally comfortable with leaving but I kind of felt like the one thing with having a continuously sick child is I don’t want to be viewed as wanting to stay at the hospital because I like the drama or that type of thing.

Finally, although some families were dealing with difficult psychosocial circumstances (including bankruptcy, chronic illness or death in other family members, prolonged spousal absences, transportation problems, and relocation), parents rarely attributed readmissions to these problems. A notable exception is that a few parents of medically complex children attributed their children’s readmissions to insufficient resources or supports at home:

When she was discharged, she was fairly stable, but she was still medically complex so, her daily care is quite a bit. I was asked if I was comfortable doing her care because we didn’t have nursing in place, and I said “yes.” But we were out for a week and it was just too much.

Parents did not consider failure to obtain medications, inability to obtain outpatient follow-up, or difficulty understanding the discharge instructions as responsible for readmissions. However, a Spanish-speaking parent described inadequate instructions for mixing a powdered antiseizure medication as contributing to her child’s readmission for medication side effects.

Providers’ Explanations for Readmissions

Providers also commonly focused on clinical factors as the predominant cause of their patients’ readmissions. However, providers frequently said that the child had met “clinical discharge criteria,” had experienced an “atypical disease course,” or that the true cause of illness had only declared itself after discharge. A few providers even indicated that readmission was unnecessary, prompted by undue clinical concerns of parents or outpatient providers (for example, minor concerns about breathing, feeding, or fever):

The sort of definition of not tolerating his feeds, there was a lot of discrepancy between the medical team and the family as to what that meant. We think he does okay and the mom thinks that he’s in pain.

Providers did not share the view that patient evaluations were lacking or inadequate. However, a few providers disclosed that alternative hospital management would have prevented readmission. As one provider stated, “If he had tracheitis and I had started him on antibiotics in the hospital, he might not have then had the readmission.”

Providers viewed medically complex children as being more prone to readmissions due to their inherent vulnerability or lower physiologic reserve and also noted the potential for challenging or uncertain diagnosis to precipitate readmissions among these children. For example, one provider acknowledged that the team had poor understanding of a patient’s condition, leading to unclear directions for home care, which resulted in readmission for electrolyte abnormalities. Although some providers acknowledged that keeping a child a longer would have prevented readmission, most believed that there was not an adequate clinical reason to do so:

Short of keeping him in the hospital inappropriately for an extended period of time, I don’t think there was a good way to get which of the kids who are the 3% to 4% who are going to have a relapse.

Consonant with their views that children were clinically ready to go home, providers often indicated that parents either seemed ready or stated that they were ready to go home. A few providers acknowledged that parents had requested or demanded to go home, and a few others recalled having difficulty gauging parents’ readiness:

But now I feel like maybe she [the mother] wasn’t as comfortable as she was telling me and maybe I should have asked the question in a different way.

Providers also described communication difficulties within the context of challenging family dynamics. For instance, providers reported difficult communications when children had multiple caregivers or caregivers who were often absent. A few providers discussed parents’ unwillingness to accept or process information about diagnosis, prognosis, or management, or simply that some parents were “looking for an answer” that could not be provided. Providers described some of these parents as angry or stressed. In general, providers linked these parent responses or family dynamics to an inability or unwillingness to follow the recommended care plan:

I think that she did the right thing by contacting us, but she was very reluctant to hear or accept any management decisions that didn’t involve readmitting her to the hospital.

One provider described an effective communication strategy that helped to

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<th>Example Diagnoses and Conditions</th>
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<td>Index Admission Diagnoses</td>
<td>Conditions Suggesting Medical Complexity</td>
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<tr>
<td>Pneumonia</td>
<td>Genetic syndrome</td>
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<tr>
<td>Bronchiolitis</td>
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<tr>
<td>Croup</td>
<td>Seizure disorder</td>
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<tr>
<td>Toxic synovitis</td>
<td>Spina bifida with hydrocephalus</td>
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<tr>
<td>Viral illness</td>
<td>Feeding intolerance with gastro-jejunostomy tube dependence</td>
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<tr>
<td>Cellulitis/abscess</td>
<td>Bronchopulmonary dysplasia</td>
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<tr>
<td>Diarrhea</td>
<td>Chronic respiratory failure with ventilator dependence</td>
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improve the family’s understanding of necessary cares during the readmission:

We had a family care conference that week to try and better ensure that the family understood exactly where we were coming from. Part of the reason is that there are multiple kinds of caregivers… That became an issue and hence the reason for the care conference. I thought that was actually very effective in making sure that they understood what the plan was.

Similar to parents, providers recognized several instances when insufficient home or community supports had led to readmissions. Providers also indicated that several readmissions could have been averted by more effective initial patient/family teaching about symptom management (eg, fever), medications, or equipment use:

If the family had understood about sticking to the right medication and why they were using it over other pain relievers, because of its anti-inflammatory properties… I think that was probably the biggest contributor to this readmission.

**Summary of Results**

Several major themes emerged as causing readmissions from the perspective of parents and providers, including the following: child-related (health and symptoms), parent/family-related (adherence), provider/team-related (medical management), communication, home supports, and discharge teaching (Fig 1). Parents and providers had different interpretations of the role or magnitude of these factors. For example, parents and providers both emphasized child-related factors but differed on the severity of symptoms or whether concerning signs/symptoms were present at the time of discharge.

**DISCUSSION**

In this study, we identified diverging parent and provider perceptions of the causes of readmissions. In a study of potentially avoidable pediatric hospital admissions, physicians identified more parent-related problems and parents identified more physician-related problems as responsible for hospital admissions. We also noted a tendency for participants to assign greater responsibility for readmission to the other party. Parents and providers considered a relatively high percentage of readmission to be potentially preventable but did not always agree on which ones were preventable.

Our study suggests that parents often attribute readmissions to lingering symptoms or insufficient medical evaluation/treatment during the initial hospitalization. Identifying parents with reservation about their children’s condition or symptoms may help to predict readmissions. Standardized discharge readiness screening may provide an opening for hesitant parents to express concerns and alert providers to nonclinical problems with teaching adequacy, caregiver knowledge, and home supports. Given the diverging opinions, screening might be enhanced by incorporating parent and provider (or nursing) perceptions.

Further research is needed to determine if vulnerable families identified by screening can benefit from targeted monitoring with postdischarge phone calls, telehealth, or home nursing visits. Having parents of medically complex children assume full responsibility for their child’s care before discharge may also help to evaluate the family’s knowledge and ability to cope.

The current study adds to our knowledge of readmissions by highlighting the potential for lack of shared perspective or understanding to lead to readmissions. For example, some providers may not appreciate the burdens of caring for a child with chronic symptoms and complex management. As a potential causal pathway to readmission, lack of shared understanding between parents and providers may hinder adequate discharge planning, hasten discharge, or lead families to deviate from recommended care.

Interventions to improve care transitions and decrease readmissions should include

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**FIGURE 1** Causes of readmission according to parents and providers.
previously recommended elements to address parent readiness, knowledge, and confidence; home supports; and the quality of discharge teaching.\textsuperscript{12–15} Our study further suggests that improvements in communication and mediation during the hospitalization may affect readmissions. Understanding common root causes of parental frustrations may help providers to optimize the use of existing frameworks such as the family care conference to more closely align families with health care teams and to develop shared care plans during the inpatient stay.\textsuperscript{24}

This study has several limitations. The retrospective design may have biased responses from both parents and providers. However, study participants did report certain experiences and perceptions as occurring before initial discharge. Additionally, in the study by Berry and colleagues, parents were interviewed soon after discharge and before readmission and thus were not biased by the occurrence of readmission.\textsuperscript{17} The small sample size limited the extent to which we were able to generate thematic differences by language, ethnicity, or age, and we did not investigate perspectives of parents and providers of children with surgical or mental health diagnoses. Finally, our results cannot be considered representative without inclusion of other tertiary care children’s hospitals or community hospitals with different socioeconomic, clinical, and rural/urban mix. However, the study provides depth of information that can be acquired only by collecting rich data from a limited sample. Knowledge gained from this study will help generate hypotheses for future investigations.

CONCLUSIONS

In addition to previously described factors, we also identified lack of shared understanding and communication difficulties between parents and providers of hospitalized children as potential causes of readmission. Further research is needed to determine if improvements in identifying and addressing such problems can reduce pediatric readmissions.

REFERENCES


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