Pediatric Primary Care Providers' Perspectives Regarding Hospital Discharge Communication: A Mixed Methods Analysis

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ABSTRACT

OBJECTIVE: Effective communication between inpatient and outpatient providers may mitigate risks of adverse events associated with hospital discharge. However, there is an absence of pediatric literature defining effective discharge communication strategies at both freestanding children's hospitals and general hospitals. The objectives of this study were to assess associations between pediatric primary care providers' (PCPs) reported receipt of discharge communication and referral hospital type, and to describe PCPs' perspectives regarding effective discharge communication and areas for improvement.

METHODS: We administered a questionnaire to PCPs referring to 16 pediatric hospital medicine programs nationally. Multivariable models were developed to assess associations between referral hospital type and receipt and completeness of discharge communication. Open-ended questions asked respondents to describe effective strategies and areas requiring improvement regarding discharge communication. Conventional qualitative content analysis was performed to identify emergent themes.

RESULTS: Responses were received from 201 PCPs, for a response rate of 63%. Although there were no differences between referral hospital type and PCP-reported receipt of discharge communication (relative risk 1.61, 95% confidence interval 0.97–2.67), PCPs referring to general hospitals more frequently reported completeness of discharge communication relative to those referring to freestanding children's hospitals (relative risk 1.78, 95% confidence interval 1.26–2.51). Analysis of free text responses yielded 4 major themes: 1) structured discharge communication, 2) direct personal communication, 3) reliability and timeliness of communication, and 4) communication for effective postdischarge care.

CONCLUSIONS: This study highlights potential differences in the experiences of PCPs referring to general hospitals and freestanding children's hospitals, and presents valuable contextual data for future quality improvement initiatives.

KEYWORDS: children; collaborative; discharge communication; medical home; transitions of care

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WHAT'S NEW

This study describes primary care providers' perspectives about effective discharge communication and areas for improvement between inpatient and outpatient providers at freestanding children's hospitals and general hospitals, providing valuable data to inform best practices and quality improvement initiatives.

IMPROVING PATIENTS' AND families' transitions home after hospital discharge is a national focus of research and health care policy.[1–5] Although pediatric data are sparse, studies have shown that approximately 1 in 5 adult patients experience an adverse event during their hospital-to-home transition.[6] Of these, approximately two-thirds are medication-related errors,[6] with procedure-related injuries and errors related to pending lab results also occurring with concerning frequency.[7–10]

Seeking to improve patients' hospital-to-home transitions, effective communication between hospital-based physicians and primary care providers (PCPs) has been established as a national standard.[11,12] Prior studies in internal

medicine have shown that direct communication between hospital-based physicians and PCPs is infrequent and inconsistent, and that discharge summaries are often unavailable at the time of the follow-up appointment.[8,13–17] Within the pediatric literature, there is a clear gap regarding effective strategies to optimize communication between hospital-based providers and PCPs.[7,18,19] With increasing numbers of pediatric hospital medicine programs across the United States, particularly in general hospitals, understanding PCPs' communication needs at structurally diverse hospitals is essential. Despite this, previous studies assessing PCPs' priorities and perspectives regarding discharge communication across geographically and structurally diverse pediatric hospital medicine programs are limited.[6,18,19]

We hypothesized that pediatric-specific discharge communication systems at freestanding children's hospitals (FCH) would be associated with improved timeliness and completeness of discharge communication relative to general hospitals (GH). We used a mixed-methods approach to assess the associations between PCPs' referral hospital type and self-reported receipt and completeness of discharge communication and to characterize PCPs' perspectives regarding effective discharge communication and areas for improvement.

METHODS

STUDY POPULATION

The Value in Inpatient Pediatrics Transitions of Care Collaborative is a consortium of geographically and structurally diverse pediatric hospital medicine programs focused on improving the quality of patients' transitions home after hospital discharge. Each of 16 sites participating in the collaborative recruited 20 PCPs for study inclusion, creating a total sample size of 320. Because of differences in data availability at participating sites, 9 sites recruited their 20 most frequently referring PCPs, while 7 sites contacted 5 PCPs weekly over 4 weeks for patients discharged during the study time frame, September 2011 to January 2012. Institutional review board approval was obtained from each site before the study implementation.

STUDY DESIGN

We distributed a questionnaire electronically to assess: (i) the value of specific data elements in discharge documents (published previously)[19]; (ii) current experiences regarding receipt of discharge documents; and (iii) demographic characteristics including practice type, years in practice, referral hospital, and geographic region according to United States census regions. The analysis presented here is derived from sections (ii) and (iii). Participants rated on a 5-point Likert scale, (i) whether they reliably received discharge communication within 2 days of hospital discharge, and (ii) the completeness of this discharge communication. Responses of 4 or 5 on the 5-point scale were defined as consistent receipt and completeness of discharge communication. Two open-ended questions assessed facilitators of and barriers to effective communica-

tion between hospitalists and PCPs at the time of hospital discharge: (i) "What works well about the communication you receive about pediatric inpatient hospitalization upon discharge home?" and (ii) "How could we improve the communication you receive about pediatric inpatient hospitalization upon discharge home?" We categorized referral hospitals as FCH or GH. GH were defined as hospitals that were not FCH, including both children's hospitals nested within adult academic centers and pediatric units in general community hospitals, categorized by principal investigators at each site in the Collaborative. Before survey implementation we pilot-tested the questions at 1 hospital participating in the Collaborative and revised the survey accordingly.

ANALYSIS

We calculated descriptive statistics to summarize participants' demographic characteristics, with differences between PCPs referring to GH and FCH analyzed using Fisher's exact and chi-square tests. Modified Poisson regression[20] was used to assess the association between hospital type and 1) PCP-reported consistent receipt of discharge communication within 2 days of hospital discharge, and 2) PCP-reported completeness of discharge communication, controlling for geographic region, years of experience and practice type, and accounting for clustering within hospitals. Analyses were carried out by Stata13 software (StataCorp 2013).

To facilitate the qualitative content analysis of responses to the open-ended questions, we uploaded responses to Dedoose, a mixed-methods data management program (version 4.3.87, 2012; SocioCultural Research Consultants LLC, Los Angeles, Calif). The free text responses were analyzed using conventional qualitative content analysis.[21] Three members of the study team (LB, JL, LM) reviewed all responses using a general inductive approach[22] to identify concepts and to develop definitions for these concepts. Two members of the study team (LB, LM) then independently applied codes to a random sample of responses. Areas of coding disagreement were discussed with code definitions subsequently revised collaboratively, and coding repeated to ensure interrater agreement. The remaining responses were subsequently coded by one member of the study team (LB or LM). Related codes were then organized in categories to identify emergent themes. Upon completion of this qualitative content analysis and consistent with established mixed-methods techniques,[23–25] the mixed-methods software enumerated frequencies of code applications according to referral hospital type.

RESULTS

POPULATION

Questionnaires were completed by 201 PCPs, representing a response rate of 63%. Thirteen PCPs did not identify their referral hospital and were therefore excluded from this analysis. Sixteen hospitals were represented, including 10 FCH and 6 GH (2 community and 4 nested hospitals). A total of 102 PCPs (54.3%) referred patients to a FCH, while