

# Parental Understanding of Hospital Course and Discharge Plan

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## ABSTRACT

**OBJECTIVES:** Hospital discharge marks an important transition in care from the inpatient team to the family and primary care provider. Parents must know the hospital course and discharge plan to care for their child at home and provide background for future providers. Our study aimed to determine parental knowledge of key aspects of their child's hospital course and discharge plan and to identify markers of increased risk for incomplete or incorrect knowledge among participants.

**METHODS:** We conducted a descriptive prospective cohort study of parents within 24 hours of hospital discharge. The primary outcome was concordance of parent responses to verbal interview questions about their child's hospital treatment, laboratory testing, imaging, procedures and discharge plan with the medical record.

**RESULTS:** Of 174 participants, 15% felt less than "completely prepared" to explain the hospital course to their primary care provider or to provide care after discharge. There was >83% overall concordance with interview responses and the medical record, with concordance higher for hospital course events than discharge plan. There were few significant differences in understanding between trainee-based teams and the attending physician-run unit. No patient or family characteristics were consistently associated with poor understanding of hospital course or discharge plan.

**CONCLUSIONS:** Although parents were generally knowledgeable about hospital course and discharge plan, areas for improved communication were identified. Individualized counseling about hospital course and discharge plan should be initiated for all parents early during hospitalization. Methods that assess and bolster caregiver comprehension and minimize dependence on written instructions may help with transition to outpatient care.

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Hospital discharge marks an important transition in responsibility from the inpatient team to the patient, family, and primary care physician.<sup>1-3</sup> Parents and guardians of hospitalized children must understand the discharge plan to effectively care for their child at home. The family who knows the major events occurring during hospitalization will also be better able to provide background for future providers. Some studies have documented concerns about the transfer of information between hospital providers and primary care providers (PCPs).<sup>2,4-8</sup> Therefore, effective counseling of parents is paramount because parents may assist as temporary information intermediaries between providers.<sup>9</sup>

There is an increasing trend toward practicing patient- and family-centered care across pediatric hospitals,<sup>10,11</sup> and several studies indicate that families and the medical team subjectively find rounding methods such as family-centered rounds (FCR) to improve communication with each another.<sup>12-18</sup> However, there is a paucity of studies examining actual parental understanding of the content of FCR,<sup>19,20</sup> specifically their child's hospital course and plan at the time of discharge. A better understanding of existing knowledge gaps could help inform efforts to improve caretaker education and discharge counseling. In addition, it may be helpful to identify specific groups at risk for incomplete or incorrect knowledge of their child's hospital course and discharge plan to better equip them with discharge counseling resources.

Although they may receive written discharge information, effective verbal communication with families is critical, given the variable health literacy of caregivers.<sup>21-24</sup> The objective of our study was to evaluate parental knowledge of key aspects of medical care received in the hospital (diagnosis, treatment, testing, and procedures) as well as key elements of the discharge plan based on verbal communication with their inpatient providers in a setting where FCR occurs. We also examined associations of increased risk for incomplete or incorrect

understanding among participants within the 24 hours before their anticipated discharge and before receipt of written discharge summary and instructions.

## **METHODS**

### **Study Design**

This descriptive prospective cohort study was constructed to assess the concordance between parental responses to verbal interview questions about specific aspects of their child's hospital course and discharge plan with documentation in the medical record.

### **Setting**

The study took place at a free-standing academic pediatric hospital, with ~14 500 admissions per year, and an average daily census of 240. The hospitalist physicians supervise care on 2 types of teams, one that comprises medical students, junior residents, and senior residents on a teaching service (Academic Teams), and another that is staffed primarily by attending physicians (Pediatric Hospitalist Attending Staffed Team or PHAST team). The average length of stay for patients on the hospitalist service for the study period was 3.8 days (4.35 days for the Academic Team service compared with 2.82 on the PHAST service, which includes primarily previously healthy children with single organ system disease). Both teams routinely conduct FCR with the participation of the physician team, parents, patient, and bedside or charge nurse. Parents not present for FCR are updated later in the day by a member of the medical team or by telephone if unavailable.

### **Pilot Data**

A questionnaire pertaining to elements of the hospitalization and discharge plan<sup>25</sup> as well as demographic information (including features such as age, ethnicity, level of education, previous hospitalization for self or child, work experience in the health care setting) was developed and then piloted with a group of parents and outpatient pediatric providers. On the basis of a study by Wallace et al, self-report of confidence in filling out medical paperwork was used as a marker for health literacy.<sup>26</sup>

### **Patient Selection**

Pediatric hospitalist attending physicians were approached from April 2012 through March 2013 to identify patients who were within 24 hours of discharge and who had already been notified that their child would be going home. Upon the conclusion of their last expected encounter with the patient on the day of discharge, attending physicians asked the child's parent/guardian if they would be willing to talk to a member of a research team studying communication with families in the hospital. All patient providers (except WH and PB) were blinded to the exact nature of the study. On the day of discharge, a member of the study team would then approach parents to explain the study and ask permission to conduct the interview. Parents were given an opportunity to ask questions about the study, and verbal consent was obtained. Parents of patients hospitalized >7 days were excluded so as not to include patients with an unusually long length of stay suggesting a complicated hospital course. Participants were intentionally not approached until after the last expected encounter with the attending physician so that they would not feel the care of their child would be affected by their participation in the study and to minimize the likelihood of a significant change in the plan of care after that encounter. Study team members performing the interviews (SB, ER, and AC) were not familiar with the reason for the patients' hospitalization, not involved in any aspect of their care, and not aware if the responses were concordant with the medical record. After the interview, parents were given the opportunity to ask questions of the supervising physician before discharge if clarification on discharge instructions or the hospital course was needed. Telephonic interpretation was used for participants who were neither English nor Spanish speaking.

### **Power Calculation**

Sufficient sample size was determined through primary analysis of differences between Academic Team and PHAST patients. On the basis of an expected ratio of 2:1 and a minimum significant odds ratio of

2, with power of 0.8, the total sample size needed was determined to be 140.

### Variables/Outcomes

Responses to specific questions about the hospital course, including therapies, laboratory testing, imaging studies, and procedures, were collected from parents by verbal interview. In addition, responses to questions related to the discharge plan of care, such as need for additional testing, discharge medications, and follow-up with other providers, were collected. Participants were also asked to complete personal information related to their demographics, level of education completed, comfort with completing medical forms, primary language spoken at home, and overall confidence with the knowledge of the discharge plan and ability to communicate the hospital course to their child's PCP.

### Data Acquisition

Questionnaire responses were recorded in REDCap, a secure, Health Insurance Portability and Accountability Act-compliant, Web-based application for building and managing online surveys and databases.<sup>27</sup> Information collected during the parent interviews was then reviewed for concordance with the medical record by 2 investigators (PB, WH) who were not involved with the patient interviews. In cases where concordance was equivocal, responses were marked as discordant. Parental responses of "I don't know" were also marked as discordant. Before official data collection, independent review of 20 pilot charts, which were not included in the study data set, was performed between the 2 raters with excellent overall reliability ( $\kappa = 0.823$ ).

### Data Analysis

Demographic information was summarized using proportions. The rate of concordance was calculated for each question based on the proportion of concordant participants of those who answered a particular question. In addition, for yes/no questions, concordance was calculated separately by correct answer to determine in which direction the errors took place. Hypothesis testing for association between potential factors and concordance was performed

using  $\chi^2$  or, where there were  $<10$  participants in any cell, Fisher's exact test. Missing data were excluded only in analyses in which 1 of the factors was missing.

### Institutional Review Board

The study was approved by the Institutional Review Board of Children's National Health System. A waiver of written consent was approved given the low risk to participants.

### RESULTS

During the study period, 174 parents agreed to participate once referred by the attending hospitalist physician. Participant characteristics are delineated in Table 1.

Eighty-five percent of respondents were mothers of the hospitalized patient. Of all respondents, 88% (153) had personally been admitted to a hospital, and 55% (94) reported having had a child previously admitted to the hospital. Eighteen percent (31) of respondents reported working in a medical setting. There were 107 participants whose child was admitted to the Academic Team, and 67 participants who were admitted to the PHAST unit.

Eighty-four percent of respondents reported feeling completely prepared to discuss the hospitalization with their child's PCP, and 82% reported feeling completely prepared

**TABLE 1** Participant Characteristics

	Participant <i>n</i> (Total <i>n</i> = 174)	Participant %
Parent age ( <i>n</i> = 172)		
<18	3	1.74
18–25	44	25.58
26–30	39	22.67
31–35	36	20.93
36–40	25	14.53
41–45	14	8.14
>45	11	6.40
Race ( <i>n</i> = 172)		
White, non-Hispanic	40	23.26
Hispanic	35	20.35
Black	87	50.58
Other	10	5.81
Parent present ( <i>n</i> = 174)		
Mother	148	85.06
Father	26	14.94
Other guardian	4	2.30
Education level ( <i>n</i> = 174)		
Did not complete elementary school	2	1.15
Elementary school	5	2.87
Middle/junior high	19	10.92
High school	81	46.55
Associate degree	12	6.90
Bachelor's degree	30	17.24
Master's or doctorate	25	14.37
Familiarity with medical setting		
Previously admitted (self) ( <i>n</i> = 173)	153	88.44
Previously admitted (child) ( <i>n</i> = 172)	94	54.65
Medical occupation ( <i>n</i> = 171)	31	18.13
Limited English proficiency		
Total number ( <i>n</i> = 174)	22	12.64
Interpreter used on rounds ( <i>n</i> = 22)	17	77.27

for discharge (Table 2). Overall, parents and guardians responded in concordance with the medical record between 83% to 99% for all questions. Breakdown of concordance by question is reported in Table 3. Parents had higher concordance with the medical record when queried about hospital course events compared with discharge follow-up plan. Specifically, participants whose children either had home medications that were stopped or needed additional testing after discharge had a concordance rate with the medical record of 61%. Parents also had higher concordance when answering questions about specifically mentioned treatment, testing, and procedures than when asked generally about “any other” therapies, tests, or procedures that had actually occurred. When treatments, testing, and procedures did not occur, participants had lower rates of concordance when asked if IV fluids had been administered or if blood tests had been performed. Of note, 6 of 19 participants whose children had been intubated were discordant with the medical record when asked about that procedure. Of the participants, 21.3% had no discordant responses, 47.7% had discordant responses for 1 or 2 questions, 24.1% were discordant on 3 or 4 questions, and 6.9% were discordant on 5 to 7 questions. There were no statistically significant differences in concordance with the medical record

**TABLE 2** Parent/Guardian Reported Preparedness for Discussing Child’s Hospital Course With Pediatrician and Reported Preparedness for Discharge

	Participant <i>n</i>	Participant %
Prepared to discuss with pediatrician		
Not at all prepared	0	0.0
A little prepared	5	2.9
Mostly prepared	23	13.2
Completely prepared	146	83.9
Prepared for discharge		
Not at all prepared	0	0.0
A little prepared	6	3.4
Mostly prepared	25	14.4
Completely prepared	143	82.2

**TABLE 3** Concordance Rates for Participant Responses.

Interview Question	Overall Concordance (Total <i>N</i> = 174) <sup>a</sup>	Concordance When MR States Yes	Concordance when MR States No
What was the diagnosis?	165/174 (94.8%)	n/a	n/a
<b>Treatments</b>			
Were antibiotics given?	161/174 (92.5%)	96/99 (97.0%)	65/69 (94.2%)
Were intravenous fluids given?	148/173 (85.5%)	109/111 (98.2%)	39/60 (65.0%)
Were nebulized treatments given?	168/174 (96.6%)	57/59 (96.6%)	111/112 (99.1%)
Was oxygen given?	162/174 (93.1%)	49/52 (94.2%)	113/117 (96.6%)
Were any blood transfusions given?	169/174 (97.1%)	1/1 (100%)	169/170 (99.4%)
Were any other therapies given?	152/174 (87.4%)	104/125 (83.2%)	48/48 (100.0%)
<b>Testing</b>			
Were any blood tests performed?	152/174 (88.4%)	111/115 (96.5%)	41/48 (85.4%)
Were any urine tests performed?	146/173 (84.4%)	53/57 (93.0%)	93/102 (91.2%)
Were any radiographs performed?	160/171 (93.6%)	72/78 (92.3%)	88/91 (96.7%)
Were any CT scans performed?	167/173 (96.5%)	22/23 (95.7%)	145/146 (99.3%)
Were any MRIs performed?	162/174 (93.1%)	8/8 (100%)	154/158 (97.5%)
Were any ultrasounds performed?	165/174 (94.8%)	30/33 (90.9%)	135/138 (97.8%)
Were any other tests performed?	145/174 (83.3%)	42/65 (64.6%)	103/106 (97.2%)
<b>Procedures</b>			
Were there any surgeries performed?	170/174 (97.7%)	18/20 (90.0%)	152/154 (98.7%)
Was an endotracheal tube used?	161/173 (93.1%)	13/19 (68.4%)	148/150 (98.7%)
Was a nasogastric tube used?	170/173 (98.3%)	10/10 (100%)	160/162 (98.8%)
Was a PICC line inserted?	171/174 (98.3%)	7/8 (87.5%)	164/164 (100.0%)
Was a lumbar puncture performed?	168/173 (97.1%)	17/17 (100%)	151/152 (99.3%)
Were there any other procedures?	169/174 (97.1%)	11/15 (73.3%)	158/159 (99.4%)
<b>Follow-up</b>			
Were any new medications added?	149/174 (85.6%)	96/111 (86.5%)	53/54 (98.1%)
Were any home medications stopped?	160/173 (92.5%)	14/23 (60.9%)	146/148 (98.6%)
Do you need to see your pediatrician after discharge?	155/174 (89.1%)	154/161 (95.7%)	1/1 (100.0%)
Do you need to see any other doctors after discharge?	152/173 (87.9%)	70/84 (83.3%)	82/84 (97.6%)
Does your child need more tests after discharge?	147/173 (85.0%)	11/18 (61.1%)	136/138 (98.6%)

CT, computed tomography; MR, medical record; PICC, peripherally inserted central catheter.

<sup>a</sup> Includes patients who answered “I don’t know,” which were excluded in “Yes” and “No” columns.

noted when comparing parents who reported feeling completely confident in summarizing the hospital course to their child’s PCP with those who reported feeling mostly, somewhat, or not at all confident. Similarly, there were no statistically significant differences noted in concordance when comparing parents reporting complete confidence with the discharge plan and those reporting feeling mostly, somewhat, or not at all confident, apart from the response to the question, “Were any urine tests performed?” ( $P = .03$ ) for which those reporting complete confidence

had fewer concordant responses with the medical record (82% vs 97%).

Few sporadic associations were seen with concordance and race, age, highest level of education completed, previous history of self-hospitalization, or occupation in a medical setting. There was no statistically significant difference in concordance with the medical record associated with previously having a child hospitalized.

Parents of patients who were transferred from either another medical facility or from different services within the institution to

the hospitalist team appeared to have similar levels of concordance with all questions apart from, "Were any CT scans performed?" (91% vs 98%,  $P = .02$ ). Participants whose children were admitted to the PHAST unit had lower concordance than those participants whose child was admitted to the Academic Team for the questions, "Were intravenous fluids given?" (71% vs 91%,  $P = .02$ ) and "Were any blood tests performed?" (81% vs 94%,  $P = .01$ ). There were no other significant differences noted between the groups.

Of the 22 respondents who reported that they primarily spoke a language other than English at home, there was no significant difference in concordance with those who did not report speaking another language, apart from the response to "Were any blood transfusions given?" (91% concordance for those speaking a language other than English compared with 99% concordance for those speaking only English,  $P = .042$ ), and the response to "Were any other therapies given?" (100% concordance for those speaking a language other than English compared with 86% concordance,  $P = .041$ ).

Of the subset of parents who were asked if they were present for rounds on the day of discharge ( $n = 118$ ), the only significant difference noted in concordance with the medical record was with the question, "Does your child need more tests after discharge?" with those who reported not being present for rounds ( $n = 16$ ) responding with 69% concordance compared with 91% concordance with those who were present for rounds ( $P = .02$ ).

When asking the question, "How comfortable do you feel completing medical forms by yourself?" 116 respondents reported feeling "completely comfortable" with the rest of the participants reporting feeling "mostly," "somewhat," or "not at all comfortable." There were no statistically significant differences found in concordance with the medical record with those who reported being "completely comfortable" and those who did not.

## DISCUSSION

Although there have been multiple recent improvement initiatives to address

communication between hospital based clinicians and primary care providers,<sup>28-31</sup> successful adherence to prescribed treatment also requires effective communication with patients and parents. It has been demonstrated that parents who comprehend the information shared with them by their pediatrician are more likely to be able to adhere to the prescribed regimen for their child.<sup>32</sup> However, it has also been demonstrated that even when reporting that information was clearly explained, there are still considerable gaps in the understanding of the plan of care,<sup>33-35</sup> necessitating additional research to further parse these gaps.

Our findings reveal that parents and guardians of hospitalized children at our institution are well informed about many aspects of the hospital course and discharge plan. The >83% concordance between the medical record and parental responses is higher than reported in previous studies of patient understanding of discharge plans in the adult population.<sup>36</sup> However, this leaves significant room for improvement in certain areas.

Concordance with the medical record was lowest with respect to whether blood, urine, or other laboratory testing had been done and whether intravenous (IV) fluids were given. There may be multiple reasons for this. When an IV line is started, blood samples may be drawn in anticipation of testing needs and to spare the patient subsequent blood draws, although some samples may ultimately not be sent to the laboratory. As for urine, it is frequently collected to measure output to assess hydration without additional laboratory testing. Parents are aware that urine was collected, but they may not distinguish between quantifying amounts and laboratory analysis. Similarly, an IV line may be used to deliver other therapies (ie, antibiotic administration), which parents may perceive as administration of IV fluids.

Concordance with discharge plans was <90% when asked about new medications at discharge, follow-up with primary care providers and subspecialists, and additional tests needed after discharge. Of note, nearly 40% of patients (9 of 23) who had a home

medication discontinued and nearly 40% of patients (7 of 18) requiring additional tests after discharge were unaware of these changes. Both pose potential safety hazards suggesting 2 key areas for improvement when counseling parents. Although all of this information would likely be conveyed on the hospital discharge paperwork, these findings demonstrate the importance of early standardized discharge counseling because parents were unable to report this information on the day of discharge, before receiving formal discharge paperwork. This is particularly important if the understanding of written instructions may be affected by limited health literacy. Interventions such as counseling by a nurse discharge advocate or clinical pharmacist,<sup>37</sup> consistent use of the teach-back method,<sup>38,39</sup> postdischarge phone call follow-up,<sup>40,41</sup> and the systematic initiatives such as the Agency for Healthcare Research and Quality Re-Engineered Discharge toolkit, have demonstrated promise.<sup>42</sup>

Apart from a few sporadic questionnaire items, participants had similar rates of concordance regardless of their reported comfort with completing medical paperwork, their reported feeling of preparedness for discussing the patient's hospitalization with the general pediatrician, or their reported feeling of preparedness for caring for the child after discharge. This suggests that for our study population, screening parents for comfort level or preparedness may not be associated with their understanding of the hospital course and discharge plan. There was also no association with limited English proficiency and concordance. However, it has been previously demonstrated that parents of limited English proficiency have different experiences during FCR, which may influence their overall understanding if appropriate measures are not taken.<sup>20,24,43</sup>

There are several limitations to this study. It was conducted at a single institution, limiting our ability to generalize our findings to other institutions with different patient populations and discharge processes. We may also have had insufficient power to detect differences within subgroup analysis because of our sample size. In addition,

some instances of discordance with the medical record may have occurred because parents were told information by the medical team that was not documented. Because we relied on referral from clinical providers, this may have created selection bias despite blinding to the exact nature of the study. Excluding patients with lengths of stay >7 days may also have affected our results by introducing selection bias. Given that verbal questionnaires were administered before the receipt of formal discharge instructions and discharge paperwork, the participant responses may not represent their final understanding of the hospital course and discharge plan. Therefore, responses do not include the knowledge gained during the final conversation with the discharging clinician or from written materials received and reviewed at that time. However, participants were only recruited after attending physicians had addressed questions during their last expected encounter with the patient, making it much less likely that the plan would change significantly before receipt of official discharge instructions.

Finally, because FCR are the predominant model of rounds at our institution, we were unable to make comparisons with other rounding styles. Therefore, although FCR are a key venue for communication between parents and providers, we cannot conclude that parental understanding in our study is a direct result of FCR, because there are other times during the course of the day when providers communicate with parents about the plan of care. Additional studies are needed to determine if changes in the format or manner of conducting FCR improves parental understanding of hospital course and discharge plan. Despite these limitations, our findings suggest that parents participating in their child's care at our institution, on the day of discharge, were generally well informed about their child's hospital course and discharge plan. This finding was true regardless of whether the patient was admitted to an Academic Team with multiple levels of trainees or to a predominantly attending physician-run unit. Although we were unable to determine key features or characteristics that would help

to identify parents or guardians with special needs for discharge counseling, our findings highlight areas in need of significant improvement. These areas include the 15% of participants who reported feeling less than "completely prepared" to explain the hospital course to their child's pediatrician and less than "completely prepared" to care for their child after discharge. Elements of the discharge plan in need of improved communication include changes to home medications and the need for follow-up testing. Our results suggest that assessing caregiver understanding of the hospital course and discharge plan, and eliciting specific concerns about either, are opportunities to improve successful discharge from the hospital. Initiation of clear and specific discharge counseling for all parents early in the hospitalization, implementation of methods that assess and bolster caregiver comprehension, and minimization of dependence on written instructions may also help with the transition to outpatient care.

## REFERENCES

- Forster AJ, Murff HJ, Peterson JF, Gandhi T, Bates D. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med.* 2003;138(3):161–167
- Ruth J, Geskey J, Shaffer M, Bramley H, Paul I. Evaluating communication between pediatric primary care physicians and hospitalists. *Clin Pediatr.* 2011;50(10):923–928
- Harlan G, Srivastava R, Harrison L, McBride G, Maloney C. Pediatric hospitalists and primary care providers: a communication needs assessment. *J Hosp Med.* 2009;4(3):187–193
- Kripalani S, LeFevre F, Phillips C, Williams M, Basaviah P, Baker D. Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. *JAMA.* 2007;297(8):831–841
- Coghlin DT, Leyenaar JK, Shen M, et al. Pediatric discharge content: a multisite assessment of physician preferences and experiences. *Hosp Pediatr.* 2014;4(1):9–15
- Bell CM, Schnipper JL, Auerbach AD, et al. Association of communication between hospital-based physicians and primary care providers with patient outcomes. *J Gen Intern Med.* 2009;24(3):381–386
- Leyenaar JK, Bergert L, Mallory LA, et al. Pediatric primary care providers' perspectives regarding hospital discharge communication: a mixed methods analysis. *Acad Pediatr.* 2015;15(1):61–68
- Moore C, McGinn T, Halm E. Tying up loose ends: discharging patients with unresolved medical issues. *Arch Intern Med.* 2007;167(12):1305–1311
- Stille CJ, Primack WA, McLaughlin TJ, Wasserman RC. Parents as information intermediaries between primary care and specialty physicians. *Pediatrics.* 2007;120(6):1238–1246
- Mittal VS, Sigrest T, Ottolini MC, et al. Family-centered rounds on pediatric wards: a PRIS network survey of US and Canadian hospitalists. *Pediatrics.* 2010;126(1):37–43
- Muething SE, Kotagal UR, Schoettker PJ, Gonzalez del Rey J, DeWitt TG. Family-centered bedside rounds: a new approach to patient care and teaching. *Pediatrics.* 2007;119(4):829–832
- Latta L, Dick R, Parry C, Tamura G. Parental responses to involvement in rounds on a pediatric inpatient unit at a teaching hospital: a qualitative study. *Acad Med.* 2008;83(3):292–297
- Mittal V, Krieger E, Lee BC, et al. Pediatric residents' perspectives on family centered rounds: a qualitative study at 2 children's hospitals. *J Grad Med Educ.* 2013;5(1):81–87
- Knoderer HM. Inclusion of parents in pediatric subspecialty team rounds: attitudes of the family and medical team. *Acad Med.* 2009;84(11):1576–1581
- Rappaport DI, Cellucci MF, Leffler MG. Implementing family-centered rounds: pediatric residents' perceptions. *Clin Pediatr (Phila).* 2010;49(3):228–234

16. Rosen P, Stenger E, Bochkoris M, Hannon MJ, Kwok CK. Family-centered multidisciplinary rounds enhance the team approach in pediatrics. *Pediatrics*. 2009;123(4):e603–e608
17. Voos K, Ross G, Ward M, Yohay A, Osorio S, Perlman J. Effects of implementing family-centered rounds (FCRs) in a neonatal intensive care unit (NICU). *J Matern Fetal Neonatal Med*. 2011; 24(11):1403–1406
18. Rotman-Pikielny P, Rabin B, Amoyal S, Mushkat Y, Zissin R, Levy Y. Participation of family members in ward rounds: Attitude of medical staff, patients and relatives. *Patient Educ Couns*. 2007;65(2): 166–170
19. Subramony A, Schwartz T, Hametz P. Family-centered rounds and communication about discharge between families and inpatient medical teams. *Clin Pediatr (Phila)*. 2012;51(8): 730–738
20. Lion KC, Mangione-Smith R, Martyn M, Hencz P, Fernandez J, Tamura G. Comprehension on family-centered rounds for limited English proficient families. *Acad Pediatr*. 2013;13(3): 236–242
21. Cheng TL, Dreyer BP, Jenkins RR. Introduction: child health disparities and health literacy. *Pediatrics*. 2009; 124(suppl 3):S161–S162
22. Sudore RL, Schillinger D. Interventions to improve care for patients with limited health literacy. *J Clin Outcomes Manag*. 2009;16(1):20–29
23. National Network of Libraries of Medicine. Health literacy. Available at: <http://nnlm.gov/outreach/consumer/hlthlit.html#A4>
24. Kutner M, Greenberg E, Jin Y. *The health literacy of America's adults: results from the 2003 National Assessment of Adult Literacy*. Washington, DC: US Department of Education; 2006
25. National Patient Safety Foundation. Ask Me 3: good questions for your good health. Available at: [www.npsf.org/?page=askme3](http://www.npsf.org/?page=askme3)
26. Wallace LS, Rogers ES, Roskos SE, Holiday DB, Weiss BD. Brief report: screening items to identify patients with limited health literacy skills. *J Gen Intern Med*. 2006;21(8):874–877
27. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2): 377–381
28. Shen MW, Hershey D, Bergert L, Mallory L, Fisher ES, Cooperberg D. Pediatric hospitalists collaborate to improve timeliness of discharge communication. *Hosp Pediatr*. 2013;3(3):258–265
29. Mussman GM, Vossmeier MT, Brady PW, Warrick DM, Simmons JM, White CM. Improving the reliability of verbal communication between primary care physicians and pediatric hospitalists at hospital discharge. *J Hosp Med*. 2015; 10(9):574–580
30. Sheu L, Fung K, Mourad M, Ranji S, Wu E. We need to talk: Primary care provider communication at discharge in the era of a shared electronic medical record. *J Hosp Med*. 2015;10(5):307–310
31. Key-Solle M, Paulk E, Bradford K, Skinner AC, Lewis MC, Shomaker K. Improving the quality of discharge communication with an educational intervention. *Pediatrics*. 2010;126(4):734–739
32. Turner T, Cull WL, Bayldon B, et al. Pediatricians and health literacy: descriptive results from a national survey. *Pediatrics*. 2009;124(suppl 3): S299–S305
33. Crane JA. Patient comprehension of doctor-patient communication on discharge from the emergency department. *J Emerg Med*. 1997;15(1):1–7
34. Musso MW, Perret JN, Sanders T, et al. Patients' comprehension of their emergency department encounter: a pilot study using physician observers. *Ann Emerg Med*. 2015;65(2):151–5.e4
35. Horwitz LI, Moriarty JP, Chen C, et al. Quality of discharge practices and patient understanding at an academic medical center. *JAMA Intern Med*. 2013; 173(18):1715–1722
36. Makaryus AN, Friedman EA. Patients' understanding of their treatment plans and diagnosis at discharge. *Mayo Clin Proc*. 2005;80(8):991–994
37. Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. *Ann Intern Med*. 2009; 150(3):178–187
38. Kountz DS. Strategies for improving low health literacy. *Postgrad Med*. 2009; 121(5):171–177
39. Kornburger C, Gibson C, Sadowski S, Maletta K, Klingbeil C. Using “teach-back” to promote a safe transition from hospital to home: an evidence-based approach to improving the discharge process. *J Pediatr Nurs*. 2013;28(3): 282–291
40. Harrison PL, Hara PA, Pope JE, Young MC, Rula EY. The impact of postdischarge telephonic follow-up on hospital readmissions. *Popul Health Manag*. 2011;14(1):27–32
41. Balaban RB, Weissman JS, Samuel PA, Woolhandler S. Redefining and redesigning hospital discharge to enhance patient care: a randomized controlled study. *J Gen Intern Med*. 2008; 23(8):1228–1233
42. Agency for Healthcare Research and Quality. Re-engineered discharge (RED) toolkit. Available at: [www.ahrq.gov/professionals/systems/hospital/toolkit/index.html](http://www.ahrq.gov/professionals/systems/hospital/toolkit/index.html)
43. Seltz L, Zimmer L, Ochoa-Nunez L, Rustici M, Bryant L, Fox D. Latino families' experiences with family centered rounds at an academic children's hospital. *Acad Pediatr*. 2011;11:432–438

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