Value Narratives: A Novel Method for Understanding High-Cost Pediatric Hospital Patients

Andrew Smith, MD,† Seth Andrews, MBA,† Victoria Wilkins, MD, MPH,† Theodore De Beritto, MD,† Stephen Jenkins, MD,† Christopher G. Maloney, MD, PhD†

ABSTRACT

OBJECTIVES: To delineate the drivers of cost associated with the most-costly inpatients in a tertiary pediatric hospital.

METHODS: We identified the 10% most-costly inpatients treated at a large regional children’s hospital in 2010. From this group we randomly selected, within representative specialties, 2 groups of 50 inpatients for detailed chart review. By using daily cost data and clinical records, 2 independent reviewers examined the clinical course of each patient to identify events that drove cost beyond that expected for standard of care. By using an iterative process, these events were grouped into themes or “cost drivers.” Linear regression was used to measure the association of number of cost drivers and total 2010 inpatient cost.

RESULTS: We identified 7 cost drivers: medical complications (49%), futile treatment (6%), failure to identify family care preferences (9%), system errors (65%), preventable admissions (21%), complex family dynamics (11%), and expensive diagnosis with no other cost driver (15%). Cost drivers were associated with increased total costs.

CONCLUSIONS: We developed a novel method for understanding high-cost inpatients. This method allowed a more detailed understanding of cost drivers than could be achieved with administrative data alone. Many of these cost drivers were related to problems with communication.
US health care costs have outstripped most other nations in the past 40 years.1 In 1970, health care costs accounted for 7.2% of the US gross domestic product. As of 2010, health care costs accounted for 17.9% of the US gross domestic product.1 A small number of patients account for a large portion of total US health care costs.2 In 2010, 5% of the US population accounted for 50% of health care expenditures.3 Almost a third of total health care costs are attributable to inpatient costs.2 The cost distribution is similar when examining only children. Among children <18 years; 5% used 54% of pediatric health care expenditures in 2010.2

Two traditional methods have described costly pediatric patients. One approach focuses on administrative data for specific groups, such as children with complex chronic conditions (CCCs) or technology-dependent (TD) children.4 Other cost research focuses on preventable admissions and complications of health care.5,6 This work has been largely descriptive and not directly focused on the factors that drive health care cost in costly patients. Despite insights gained from these methods, pediatric health care spending continues to increase.

The health care community has an interest in achieving higher value (health outcome per cost spent) care.7,8 Primary Children's Hospital (PCH) has an ongoing effort to improve the value of care provided. For our institution, in every year between 2000 and 2010, the 10% most-costly inpatients accounted for approximately 60% of all inpatient costs.3 These patients were young (<2 years old) and medically complex.6 Our high-cost inpatients rarely continued to be expensive, with <10% of high-cost patients from any given year returning to the top decile of costs in subsequent years.9

Although these administrative data findings provided some insight, they did not fully explain the cost drivers among our high-cost inpatients. We sought a different approach. Narrative theory has been used to further explore health care issues, such as patient safety.10 We describe a project to identify inpatient cost drivers through narrative theory and analysis.

**METHODS**

Medical records and cost data were reviewed for children within the top decile of inpatient costs during 2010, the most recent year with a complete data set when the study began. The study was approved by PCH privacy board and the University of Utah's Institutional Review Board and was granted a waiver of informed consent.

**Setting**

PCH is a tertiary, pediatric teaching hospital located in Salt Lake City, Utah, with 289 inpatient beds. It is the only children's hospital in Utah and cares for almost all pediatric inpatients in Utah after the neonatal period. Intensive care units are closed with medical and surgical subspecialty services consulting. Medical and surgical subspecialty services attend on patients admitted or transferred to the inpatient wards. A hospitalist service attends on patients with general pediatric diagnoses and those not assigned to a subspecialty service on inpatient wards.

**Cohort**

We identified all 10,003 patients discharged from PCH in 2010. Total 2010 inpatient cost was calculated for each patient by using Intermountain Healthcare's cost accounting system.11 The cost accounting system allocates total facility operating expenses at the patient service level. Examples include nursing time and general hospital overhead, medication, operating room usage and supplies, laboratory tests, and imaging. Each service is assigned a unit cost, and given the amount of services provided, we can calculate the cost of providing care for an individual patient. We then ranked patients by total 2010 inpatient cost from highest to lowest. The top 10% of patients (n = 1,003) were included for quantitative portion of the study and defined as high-cost inpatients for 2010. Of the high-cost inpatients, we completed a narrative review of 100 patients. (The method is described in the following paragraphs.)

**Cohort Data**

The following data were collected for all 2010 high-cost inpatients (n = 1,003): age at first 2010 admission, sex, race, insurance status, preferred language, number of 2010 admissions, previous admission to PCH from 2000 to 2009, total inpatient cost, total length of stay for all 2010 hospitalizations, detailed inpatient cost by day, and 2010 inpatient death (if applicable) (Table 1). By using International Classification of Diseases, Ninth Revision codes, patients were classified as TD or neurologically impaired (NI) and the number of CCCs for each patient calculated.12,13

Each patient was assigned to a subspecialty service by identifying the attending-of-record for the patient's costliest 2010 admission. The number of patients assigned to each subspecialty service and total cost for each subspecialty service was calculated. Professional fees were not included in total costs, as professional fees are billed independently of hospital costs. At PCH, professional fees average 18% of hospital cost (E. Donnelly, MHA, e-mail communication, 2015).

**Qualitative Review**

**Patients**

We selected 50 patients from the cohort for initial chart review. To include most subspecialty services, we randomly selected patients within each subspecialty, reflecting the proportion of patients by subspecialty within the entire cohort. For example, neonatology subspecialty represented 10% of the entire cohort. Therefore, 5 neonatology patients were randomly selected for detailed review. Eleven subspecialties were represented in the study (Table 2). Subspecialties with <1% of high-cost admissions were not included in the study. A second group of 50 patients was selected by using identical methodology after review of the first group. Until we reviewed the second group of 50 patients, it was not clear that we had reached thematic saturation with the first 50 patients.

We compared the reviewed patients against the entire top-decile cohort by age, sex, race, insurance status, preferred language, rate of NI, TD, ≥3 CCCs, 2010 inpatient death, total 2010 inpatient cost, inpatient cost per day, and total length of stay for hospitalizations in 2010.
**Value Narratives**

For reviewed patients, 2010 inpatient costs were imported into Tableau (Version 7, Tableau Software, Seattle, WA). Chronological cost curves were created for each patient detailing 3 categories of inpatient cost from the cost accounting system: (1) Daily Cost (nursing time and room overhead), (2) Therapy (medication, rehabilitation services, respiratory therapy, and operative cost), and (3) Diagnostics (laboratory and radiology). Supplies and services not placed into 1 of the 3 categories by the cost accounting system were listed separately. Total 2010 inpatient cost, cost per admission, daily cost, and cost for each individual item were displayed. Total cost per category, cost per admission, and cost per day also could be viewed.

In addition to costs, 2 investigators (T.D.B. and S.J.) extracted the clinical course for each patient, identifying important clinical events during the course of hospitalization. Extracted clinical events were assessed for face validity by the subspecialty reviewers.

**Extracted Clinical Events**

- Admissions
- Discharges
- Transfers to different level of care
- Initial medical consultations
- Complications
- Assisted ventilation
- Operations
- Major diagnostic events
- Cardiopulmonary arrest
- Care conferences
- Social work visits
- Changes in primary attending

For each patient, the cost curve and extracted clinical events were integrated into a value narrative demonstrating clinical events and associated daily costs for all 2010 admissions.

**Chart Review**

Chart reviews were completed in 2 groups of 50 patients each.

For the first group, the principal investigator ([P.I.] A.S.) and a separate subspecialty reviewer completed a formative review of each patient’s hospital course. For each subspecialty, there was a single reviewer. The subspecialty reviewer was assigned based on the most-costly admission. For patients admitted to different subspecialty services during less-costly admissions, they remained assigned to the subspecialty service of the most-costly admission.

Reviewers were provided the patients’ value narratives. Reviewers were instructed to use the value narrative and clinical record to identify any event that increased cost beyond standard of care. Reviewers documented the events they determined to increase cost by recording a brief clinical summary of the event, the date, and clinical note type where the event was identified.

### TABLE 1 Comparison of Top Decile and Reviewed Patients by Demographic, Medical Complexity, and Cost Data

<table>
<thead>
<tr>
<th></th>
<th>Top Decile of Patients, n = 1003</th>
<th>Reviewed Patients, n = 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at initial 2010 admission, n (%)</td>
<td>Birth to 29 d 219 (22) 20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 d–23 mo 263 (29) 32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2–5 y 143 (14) 14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6–12 y 158 (16) 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13 y and older 190 (19) 18</td>
<td></td>
</tr>
<tr>
<td>Girls, n (%)</td>
<td>451 (45) 43</td>
<td></td>
</tr>
<tr>
<td>Insurance commercial, n (%)</td>
<td>560 (56) 61</td>
<td></td>
</tr>
<tr>
<td>Death in 2010, n (%)</td>
<td>62 (6) 6</td>
<td></td>
</tr>
<tr>
<td>NI, n (%)</td>
<td>423 (42) 40</td>
<td></td>
</tr>
<tr>
<td>TD, n (%)</td>
<td>472 (47) 45</td>
<td></td>
</tr>
<tr>
<td>&gt;2 CCCs, n (%)</td>
<td>304 (30) 29</td>
<td></td>
</tr>
<tr>
<td>Race white, n (%)</td>
<td>767 (77) 70</td>
<td></td>
</tr>
<tr>
<td>Preferred language English, n (%)</td>
<td>903 (90) 91</td>
<td></td>
</tr>
<tr>
<td>PCH admission from 2000–2009, n (%)</td>
<td>655 (65) 68</td>
<td></td>
</tr>
<tr>
<td>Total cost, median (IQR)</td>
<td>$92,242 ($59,560–$162,545)</td>
<td>$93,754 ($59,747–$151,336)</td>
</tr>
<tr>
<td>Length of stay, median (IQR)</td>
<td>26.8 d (17.9–48.9 d) 25.7 d (17.1–43.3 d)</td>
<td></td>
</tr>
<tr>
<td>Cost per day, median (IQR)</td>
<td>$3435 ($2747–$4607) $3858 ($2774–$4733)</td>
<td></td>
</tr>
</tbody>
</table>

a Other: pediatric rheumatology, neurology, plastic surgery, anesthesia, emergency medicine, and dermatology. Three patients did not have a primary subspecialty service identified.

### TABLE 2 Top Decile of Patients by Subspecialty Division and Distribution of Patients Reviewed

<table>
<thead>
<tr>
<th>Primary Attending Service</th>
<th>Number of Patients</th>
<th>Total Cost, $</th>
<th>Total Number of Patients Reviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonatology</td>
<td>233</td>
<td>42,282,368</td>
<td>24</td>
</tr>
<tr>
<td>General Inpatient Pediatrics</td>
<td>169</td>
<td>19,140,326</td>
<td>18</td>
</tr>
<tr>
<td>Cardiology</td>
<td>150</td>
<td>18,404,988</td>
<td>14</td>
</tr>
<tr>
<td>Hematology Oncology</td>
<td>118</td>
<td>21,105,406</td>
<td>12</td>
</tr>
<tr>
<td>General Surgery</td>
<td>74</td>
<td>7,447,969</td>
<td>8</td>
</tr>
<tr>
<td>Critical Care</td>
<td>58</td>
<td>7,194,371</td>
<td>6</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>57</td>
<td>4,787,510</td>
<td>6</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>40</td>
<td>10,187,989</td>
<td>4</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>38</td>
<td>3,488,423</td>
<td>4</td>
</tr>
<tr>
<td>Nephrology</td>
<td>19</td>
<td>1,690,582</td>
<td>2</td>
</tr>
<tr>
<td>Physical Medicine and Rehabilitation</td>
<td>17</td>
<td>2,076,403</td>
<td>2</td>
</tr>
<tr>
<td>Othera</td>
<td>30</td>
<td>3,222,131</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1003</td>
<td>140,968,480</td>
<td>100</td>
</tr>
</tbody>
</table>

a Other: pediatric rheumatology, neurology, plastic surgery, anesthesia, emergency medicine, and dermatology. Three patients did not have a primary subspecialty service identified.
Reviewer completed the chart reviews independently.

After completion of the first group’s reviews, the PI and each reviewer reached consensus on key clinical events associated with increased inpatient cost for each patient. The reviewers then grouped key clinical events into themes that were recorded by the PI.14 Although the PI participated in theme development with each reviewer, the reviewers had no knowledge of themes developed by other reviewers. After completion of the first 50 patient reviews, the PI provided all themes to the reviewers so that they could assess face validity.

The reviewers then completed chart reviews for the second group of 50 patients, with knowledge of the themes identified during the first review. Again reviewers identified key clinical events contributing to increased inpatient costs beyond standard care by using identical methodology as with the first group of patients.

After completion of the second reviews, the PI and reviewers again reached consensus on key clinical events associated with increased cost. The reviewers then associated clinical events with the previously identified themes and, if needed, identified new themes. Thematic saturation was determined when the PI and collaborative coders agreed that no new themes were identified.

The PI then reviewed all 100 patients’ value narratives and clinical courses to ensure appropriate themes were assigned to each patient.

Statistics
Statistics were calculated by using SPSS version 21 (IBM SPSS Statistics, IBM Corporation, Chicago, IL). Linear regression was performed by using total cost driver count as the independent variable and log-transformed total 2010 inpatient cost as the dependent variable. Multiple regression was completed including all cost drivers as independent variables and log-transformed total 2010 inpatient cost as the dependent variable.

RESULTS
Qualitative Review Patients
The 100 patients selected for qualitative review were representative of all 2010 high-cost inpatients with similar demographic features, medical complexity, and costs (Table 1). Most patients were <2 years old and almost 50% of patients were either TD or NI (Table 1). Most patients had never been admitted to PCH before 2010. The number of patients selected within each subspecialty service is shown in Table 2.

Identified Themes: Drivers of Cost
We identified 7 cost drivers among high-cost inpatients. Table 3 displays the number of patients for each cost driver. Thematic saturation was achieved during the second round of reviews. (Thematic saturation occurs when no new themes are identified and data collection is considered complete.) In all cases, consensus was reached between reviewers.

1. Complications
Two criteria were required: (1) The complication was caused by the care provided. Any event that could be considered a consequence of disease was excluded. (2) The patient’s attending physician documented the event as a complication (see Figs 1 and 2).

2. Futile Treatment
Treatment was categorized as futile if the PI and the reviewer agreed that treatment met the definition of qualitative or quantitative futility after independent review.15

3. Failure to Identify Family’s Preferences for Care
Failure to identify the family’s preferences for care occurred when the medical team missed early opportunities to discuss treatment goals with the family, only to later recognize the treatment plan should have been modified to meet the patient’s wishes. Failures occurred most often when the patient’s care required coordination with several subspecialty services.

4. Delivery System Errors
For 65 patients, problems with the delivery of inpatient medical care drove cost. Five similar themes were combined into a single category.

### TABLE 3 High-Cost Inpatient Cost Drivers

<table>
<thead>
<tr>
<th>Cost Driver</th>
<th>Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complications, %</td>
<td>49</td>
</tr>
<tr>
<td>Futile treatment, %</td>
<td>6</td>
</tr>
<tr>
<td>Failure to identify family’s preference of care, %</td>
<td>9</td>
</tr>
<tr>
<td>System errors, %</td>
<td>65</td>
</tr>
<tr>
<td>Delay in the next step of care</td>
<td>33</td>
</tr>
<tr>
<td>Inappropriate inpatient service</td>
<td>14</td>
</tr>
<tr>
<td>Attending variability</td>
<td>24</td>
</tr>
<tr>
<td>Inadequate care coordination</td>
<td>5</td>
</tr>
<tr>
<td>Higher level of care than necessary</td>
<td>31</td>
</tr>
<tr>
<td>Preventable admissions, %</td>
<td>22</td>
</tr>
<tr>
<td>Complex family dynamics, %</td>
<td>11 (2 families with both subthemes)</td>
</tr>
<tr>
<td>Disruptive family behavior</td>
<td>7</td>
</tr>
<tr>
<td>Lack of adherence</td>
<td>2</td>
</tr>
<tr>
<td>Expensive diagnosis with no other cost driver, %</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of cost drivers per patient</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of cost drivers</td>
<td>15</td>
</tr>
<tr>
<td>Expensive diagnosis only</td>
<td>36</td>
</tr>
<tr>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

a. Delay in the Next Step of Care
Delay in the next step of care occurred when a patient waited for treatment that could have occurred sooner while only maintenance care was provided (see Figs 1, 2, and 3).

b. Inappropriate Inpatient Service
Patients admitted to the wrong service were identified by using 2 criteria: (1) the patient was transferred to or from a higher level of care within the first 12 hours of admission; (2) the patient was admitted to a subspecialty service that was unable to provide care for the patient’s condition and was transferred to a different service before the development of a treatment/diagnostic care plan (see Fig 3).
c. Attending Variability
Variability between attending physicians was defined in 2 ways: (1) the medical record documented a shift in the treatment plan after an attending hand-off; or (2) the reviewer identified treatment by one attending physician that varied significantly from the standard of care (see Fig 3).

d. Inadequate Care Coordination
Care coordination was inadequate when either disagreement or lack of communication between subspecialty services led to increased utilization or unnecessary prolongation of care secondary to the absence of a treatment plan.

e. Higher Level of Care Than Necessary
Higher level of care than necessary was defined in 2 ways: (1) criteria for admission, transfer, or discharge were documented in the chart and then ignored; or (2) the reviewer identified patient placement not meeting standard of care at our hospital. This occurred in 3 ways: (1) the patient met outpatient criteria at the time of admission, (2) the patient spent additional time in an ICU despite resolution of required critical monitoring or support technologies, or (3) the patient remained hospitalized after meeting discharge criteria (see Figs 1, 2, and 3).

f. Preventable Admissions
Preventable admissions were identified by using criteria reported in previous studies: (1) onset of preventable disease, (2) acute disease potentially controlled in the outpatient setting, (3) chronic condition potentially managed as an outpatient16 (see Fig 3).

6. Complex Family Dynamics
Family members could increase cost in 2 ways: (1) lack of adherence to prescribed treatment plan, (2) difficult and disruptive behavior.
Lack of adherence was defined as the patient not following the prescribed treatment plan. Difficult and disruptive
behavior was identified when the clinical record documented behavior that adversely affected treatment (see Fig 2).

7. Expensive Diagnosis
Expensive diagnosis was identified as the cost driver for any patient who had no other identified cost drivers. For these patients, inpatient costs were directly attributed to standard treatment of their diagnosis. Expensive diagnoses included severe trauma, spinal surgery, cystic fibrosis, aplastic anemia, acute myeloid leukemia, and congenital heart disease (see Fig 4).

Number of Drivers of Cost
Table 3 displays the number of patients with each cost driver. Fifteen patients had no cost drivers, other than expensive diagnosis, associated with their hospital stay. Linear regression demonstrated an increase in total inpatient cost as the number of cost drivers increased (r² 0.18, P = .000). Multiple regression, which included all 7 cost drivers as independent variables, predicted total inpatient cost with an r² of 0.34 (P = .000). Complications and delivery system mistakes were the largest contributors to the regression model.

DISCUSSION
By using detailed chart reviews and associated hospital cost, we created value narratives for high-cost inpatients. Value narratives allowed us to identify cost drivers that impede delivery of high-value inpatient care. The 7 cost drivers included complications of medical treatment, provision of futile treatment, failure to identify family’s preferences for care, system errors, preventable admissions, and complex family dynamics. The seventh cost driver, expensive diagnosis, reflects the largely unavoidable costs associated with standard treatment.

Although preventable admissions and complications have previously been identified as drivers of cost by using administrative data, our novel method of identifying cost drivers revealed several causes of cost drivers that would not have
been identified by using only administrative data. In particular, the provision of futile treatment, failure to identify family’s preferences for care, system errors, and complex family dynamics would have otherwise been missed. Many of the cost drivers are related to communication issues between providers or between providers and families. Communication problems between providers include inadequate and frequent handoffs, problems with existing official communication channels, and cultural issues within the hospital. Themes in the “systems errors” category were caused or exacerbated by inadequate communication between providers.

Previous literature has identified the impact of poor communication on quality and safety. Our research suggests that strategies to improve communication among providers and between providers and families also have the potential to reduce cost.

At PCH we are developing methods to identify these cost drivers prospectively. For example, we are identifying families at risk for disruptive behavior early in the admission. Front-line providers, administration, and patient-relations experts intervene early to mitigate issues arising from these behaviors before they become disruptive.

We found that 68 of our high-cost inpatients had never been admitted to the hospital before 2010. Thirty-eight of these patients were neonates, who by definition have no previous utilization. Additionally, oncology patients accounted for 13 in the cohort. Oncology patients are typically healthy until diagnosis, accrue significant cost during treatment, and once in remission are followed as outpatients. Previous work emphasizes the importance of outpatient management and prevention of readmissions to control inpatient costs. It is difficult to identify ways outpatient care programs could decrease costs for neonates and newly diagnosed oncology patients, a significant subset of our high-cost inpatients.

To create higher value care for inpatients, our findings suggest we should proactively address cost drivers for hospitalized patients. High-cost inpatients usually have multiple cost drivers associated with their hospital course.

FIGURE 3 Preventable admissions. A 9-month-old child with seizure disorder was admitted 7 times. Four of the admissions were for <24 hours and deemed preventable, as they could have been managed as an outpatient. However, neither neurology nor the primary care provider actively managed the patient as an outpatient. Additional Cost Drivers: System Mistakes and Errors (delay in next step of care, inappropriate inpatient service, higher level of care than necessary).
Many cost drivers increased utilization of care and length of stay. However, fee-for-service reimbursement models reward increased utilization. To potentially decrease costs, new reimbursement models must align incentives to address unnecessary utilization and length of stay. We are piloting a value-based payment model with commercial payers at PCH. By aligning financial incentives, providers, payers, and patients have a vested interest in decreasing utilization and avoiding cost drivers. Nine percent of children in Utah are now covered under this program (E. Donnelly, MHA, e-mail communication, 2015). The program is using our findings and methodology to better understand high-cost outliers among their covered population.

Our study has several limitations. The analysis included only high-cost inpatients at a single institution. Although this may influence the identified cost drivers, our methodology for developing value narratives can be applied to other settings if detailed cost data are available. In addition, we did not address cost drivers occurring outside the hospital. Additionally, our study does not include patients’ perspectives. Given that many of our cost drivers are related to communication, including input from patients could prove insightful. Finally, further research, which focuses on the value narratives of standard or low-cost patients, will likely prove equally illuminating.

Our results suggest value narratives can provide a fuller understanding of high-cost inpatients than is appreciated when analysis is limited to quantitative methodologies and administrative data.

REFERENCES


3. Gonzalez J. STATISTICAL BRIEF #425: National Health Care Expenses in the U.S. Civilian Noninstitutionalized


14. Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health Serv Res*. 2007;42(4):1758–1772


Value Narratives: A Novel Method for Understanding High-Cost Pediatric Hospital Patients
Andrew Smith, Seth Andrews, Victoria Wilkins, Theodore De Beritto, Stephen Jenkins and Christopher G. Maloney
Hospital Pediatrics 2016;6:569
DOI: 10.1542/hpeds.2016-0033 originally published online September 21, 2016;

Updated Information & Services
including high resolution figures, can be found at:

Supplementary Material
Supplementary material can be found at:

References
This article cites 19 articles, 5 of which you can access for free at:

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
Administration/Practice Management
http://www.hosppeds.aappublications.org/cgi/collection/administration_practice_management_sub
Hospital Medicine
http://www.hosppeds.aappublications.org/cgi/collection/hospital_medicine_sub

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
http://www.hosppeds.aappublications.org/site/misc/Permissions.xhtml

Reprints
Information about ordering reprints can be found online:
http://www.hosppeds.aappublications.org/site/misc/reprints.xhtml
Value Narratives: A Novel Method for Understanding High-Cost Pediatric Hospital Patients
Andrew Smith, Seth Andrews, Victoria Wilkins, Theodore De Beritto, Stephen Jenkins and Christopher G. Maloney
Hospital Pediatrics 2016;6;569
DOI: 10.1542/hpeds.2016-0033 originally published online September 21, 2016;

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://hosppeds.aappublications.org/content/6/10/569