

# Pediatric Price Transparency: Still Opaque With Opportunities for Improvement

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## ABSTRACT

**OBJECTIVES:** Price transparency is gaining importance as families' portion of health care costs rise. We describe (1) online price transparency data for pediatric care on children's hospital Web sites and state-based price transparency Web sites, and (2) the consumer experience of obtaining an out-of-pocket estimate from children's hospitals for a common procedure.

**METHODS:** From 2015 to 2016, we audited 45 children's hospital Web sites and 38 state-based price transparency Web sites, describing availability and characteristics of health care prices and personalized cost estimate tools. Using secret shopper methodology, we called children's hospitals and submitted online estimate requests posing as a self-paying family requesting an out-of-pocket estimate for a tonsillectomy-adenoidectomy.

**RESULTS:** Eight children's hospital Web sites (18%) listed prices. Twelve (27%) provided personalized cost estimate tool (online form  $n = 5$  and/or phone number  $n = 9$ ). All 9 hospitals with a phone number for estimates provided the estimated patient liability for a tonsillectomy-adenoidectomy (mean \$6008, range \$2622–\$9840). Of the remaining 36 hospitals without a dedicated price estimate phone number, 21 (58%) provided estimates (mean \$7144, range \$1200–\$15360). Two of 4 hospitals with online forms provided estimates. Fifteen (39%) state-based Web sites distinguished between prices for pediatric and adult care. One had a personalized cost estimate tool.

**CONCLUSIONS:** Meaningful prices for pediatric care were not widely available online through children's hospital or state-based price transparency Web sites. A phone line or online form for price estimates were effective strategies for hospitals to provide out-of-pocket price information. Opportunities exist to improve pediatric price transparency.



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As health care consumers face higher deductibles, copays, and coinsurances (or potentially being uninsured), anticipating costs of care has become increasingly important to families.<sup>1</sup> Price transparency refers to freely accessible estimates of consumers' health care expenditures. Calls for price transparency from consumers, providers, and politicians have gained traction because health care prices often are unavailable to consumers and vary widely.<sup>2,3</sup> The ability of consumers to price shop for health care plays an important role in several state policy proposals to contain cost growth, such as mandated reporting of amounts paid for health care services at the consumer's request and preventing unexpected, significant financial burdens for both insured and uninsured families.<sup>4,5</sup>

The use of increased cost-sharing (eg, higher deductibles, copays, and coinsurances) to encourage consumers to shop for cost-effective health care but without concomitant price transparency has been compared with "blindfolding shoppers entering a department store."<sup>6</sup> Additionally, proposed legislation, such as the American Health Care Act, puts millions more American families at risk for losing insurance coverage. For families considering care at a children's hospital, the availability of price (and quality) information may be particularly important because care at a children's hospital may be associated with higher prices than other hospitals.<sup>7,8</sup>

Several challenges exist to achieving meaningful price transparency. First, the imprecise term "price" can refer to any of the following: how much a hospital bills an insurance provider or family ("billed charges"); how much an insurer reimburses hospitals at a negotiated rate (the "reimbursed amount"); or how much the patient or family must pay ("out-of-pocket costs"). Billed charges are less meaningful to families who rarely, if ever, pay the full charge. Additionally, quoted prices may not include both professional (eg, physician) and facility (eg, hospital) fees, if applicable. Furthermore, the usefulness of price data is enhanced when

reported alongside quality information so that families can assess value.<sup>9,10</sup>

Price transparency for pediatric care is not a well-studied area. The landscape of publicly available, adult price transparency data from state-level organizations has been described and largely consisted of lists of billed charges.<sup>11</sup> Considering pediatrics separately is important because of its unique delivery and financing considerations. For example, the majority of pediatric subspecialty care occurs in children's hospitals, which may have higher costs of care.<sup>7</sup> Children's insurance coverage options, benefits, and reimbursement rates can differ from adults'.<sup>12-14</sup> Additionally, the same diagnosis (eg, influenza) often follows a different clinical course in children than adults, which can affect cost.<sup>15</sup> Our objectives in this study were to (1) describe the availability of price transparency data for pediatric health care services in freestanding children's hospitals and on state-based price transparency Web sites, and (2) use secret shopper methodology to evaluate the consumer experience when requesting out-of-pocket estimates for a common procedure from children's hospitals.

## METHODS

This study consisted of 3 parts. First, from June to July 2015, at least 2 researchers independently reviewed and extracted data from the 46 freestanding children's hospitals in the United States using a standardized electronic data collection form. Any discrepancies were resolved by consensus. Second, secret shopper methodology was used to request price estimates from children's hospitals for a tonsillectomy-adenoidectomy, which is a common, nonurgent pediatric procedure, making it an ideal procedure for price shopping in advance. Third, 38 state-based price transparency Web sites were reviewed.

### Price Transparency on Children's Hospital Web Sites

Freestanding children's hospitals' Web sites, identified by the Children's Hospital Association, were examined to ensure that

we obtained pediatric-specific price information. On each site, we searched for terms "prices," "price list," "costs," and "price transparency" on internal Web site search engines, if available. For simplicity, we henceforth use the term "price" for all types of estimates. We then browsed Web site sections in which prices or price estimate tools were likely to be found (eg, financial services and "preparing for your visit"). We recorded the availability and characteristics of health care prices (eg, the types of prices shown, such as billed charges or out-of-pocket estimates and whether estimates included facility fees only or facility plus professional fees). We also searched for tools (eg, a phone number or online form) to obtain personalized price estimates that account for insurance details (eg, having met a deductible).

### Secret Shopper Price Inquiries to Children's Hospitals

From October 2015 through February 2016, we called all freestanding children's hospitals (excluding 1 hospital that provides oncologic care free of charge) using secret shopper methodology<sup>16</sup> and posing as a parent requesting a price estimate for a tonsillectomy-adenoidectomy (Current Procedural Terminology 42820) for a healthy 5-year-old child. During initial pilot testing, we requested price estimates posing as members of an insured family with a high-deductible plan to better understand the insured consumer's experience obtaining a personalized estimate, but hospital representatives could not provide estimates without a membership identification number for a specific insurance plan. Therefore, we reported being members of a self-pay family temporarily without insurance. We followed a standardized script refined through pilot testing. The script began with a request for a tonsillectomy-adenoidectomy price and then asked what was included in the estimate, how much would be due on the day of the surgery, and about potential discounts and the ability to negotiate the price.

In considering how a typical family might attempt to obtain a price estimate, we called the phone numbers specifically listed

for obtaining an estimated “cost of care” at the 9 hospitals that provided this personalized price estimate tool. Otherwise, we called each hospital’s main phone number listed on its Web page. We performed a similar estimate inquiry by submitting online forms if they were available.

For each phone call, we recorded whether a price estimate was provided, the estimate amounts, the inclusion of facility fees only or facility plus professional fees, the number of minutes to be connected to the appropriate representative, call duration, and call characteristics. For each online form inquiry, we documented if an estimate was provided, the estimate amounts, turnaround time, and route of estimate receipt (eg, e-mail, phone, or letter).

### State Price Transparency Web Sites

We examined state-based price transparency Web sites because many states publicly report health care price information collected under legislative or regulatory authority.<sup>2</sup> We initially examined a list of 62 publicly available, patient-oriented Web sites from a 2012 study,<sup>11</sup> then we excluded 29 sites that were duplicative or no longer functional ( $n = 15$ ) or were not relevant to pediatric medical care prices (eg, Medicare, pharmacy, or quality data only) ( $n = 14$ ). Through a systematic Internet search, we reviewed the top 5 Web sites identified by entering each state name and each of the following terms: (1) “health care costs,” (2) “health care prices,” (3) “health care charges,” (4) “medical treatment costs,” (5) “out-of-pocket health costs,” (6) “consumer health costs,” (7) “patient costs,” (8) “compare medical costs,” (9) “compare health costs,” and (10) “health care cost comparison.” By using this algorithm and inclusion and exclusion criteria described previously,<sup>11</sup> we identified 5 new state-based price transparency sites for a total of 38 Web sites (see Supplemental Table 4).

For each Web site, we recorded if consumers could distinguish between the prices of pediatric versus adult care and if pediatric-specific prices were available for all diagnoses or only select diagnoses. We documented the characteristics of listed health care prices, with a focus on a

tonsillectomy-adenoidectomy, and the availability of personalized price estimation tools. We documented the mean and range of price estimates for a tonsillectomy-adenoidectomy from each Web site. Finally, we recorded the availability of any adult or pediatric quality indicators, such as mortality, readmission rate, or patient satisfaction.

The University of Pennsylvania Institutional Review Board approved this study and waived the requirement for consent.

## RESULTS

### Price Transparency on Children’s Hospital Web Sites

Forty-five children’s hospitals located in 25 states were included in the analysis. Eight children’s hospitals’ Web sites (18%) provided dollar estimates of prices for any pediatric care (Table 1), the most common being billed charges ( $n = 6$ ). One hospital provided average expected out-of-pocket costs for an insured family, listed as “typical total patient liability,” with multiple caveats about allowing for individual variation in the amount covered by insurance. Another hospital provided out-of-pocket fees for international adoption clinic services only. Some sites listed services by using medical terminology that may be unfamiliar to families (Fig 1).

One of the 8 hospitals provided a tonsillectomy-adenoidectomy billed charge estimate of \$4287 and did not specify if it included facility fees only or facility plus

professional fees (Table 1). Four sites provided prices for the operating and recovery rooms and nursing services in 15-minute increments that required families to calculate a billed charge estimate.

Twelve sites (27%) provided a personalized price estimate tool. These included a phone number ( $n = 9$ ) specifically for price estimates and/or an online form ( $n = 5$ ) for families to enter insurance details and expected care.

### Secret Shopper Price Inquiries to Children’s Hospitals

Overall, 30 (67%) children’s hospitals provided a self-pay price estimate, ranging from \$1200 to \$15360 for a tonsillectomy-adenoidectomy (Table 2). All 9 children’s hospitals with a specific price estimate phone number provided an estimate (mean \$6008, range \$2622–\$9840). All representatives from these 9 hospitals offered self-pay discounts (mean 42%, range 25%–50%), which were often contingent on paying in full on the day of service. Seven estimates included facility fees (mean \$5344; range \$2622–\$6400), whereas 2 included facility and professional fees (\$6823 and \$9840). On the specific price estimate phone lines, the mean time to speak to an appropriate representative was 4 minutes with a mean call duration of 9 minutes.

When calling the main phone number for the remaining 36 children’s hospitals, 21 (58%) hospitals were able to provide estimates (mean \$7144, range

**TABLE 1** Price Transparency Information on Children’s Hospital Web Sites ( $N = 45$ )

Price Transparency Information	<i>N</i> (%)
Provided price estimate for any pediatric care	8 (18)
Billed charges	6 (13)
Out-of-pocket costs <sup>a</sup>	2 (4)
Provided price estimate for tonsillectomy-adenoidectomy	1 (2)
Billed charges	1 (2)
Personalized cost estimation tool available <sup>b</sup>	12 (27)
Online form for families to submit	5 (11)
Phone number for families to call for a personalized estimate	9 (20)

Of the 46 freestanding children’s hospitals in the United States, 1 provides oncologic care free of charge to all families and was therefore excluded from the analysis.

<sup>a</sup> Of the 2 hospitals listing out-of-pocket costs, 1 provided mean expected out-of-pocket costs for an insured family (denoted as “typical total patient liability”) with multiple caveats about allowing for individual variation in the amount covered by insurance. The other hospital provided out-of-pocket fees for international adoption clinic services only.

<sup>b</sup> Two of 12 hospitals provided both types of tools.

50 Most Used Outpatient Services Codes			
Rank	HCPCS*	HCPCS Desc	Average Charge
1	99233	Subsequent hospital care	\$280
2	99283	Emergency Visit Level 3	\$776
3	99232	Subsequent hospital care	\$195
4	99284	Emergency Visit Level 4	\$1,457
5	85025	Complete CBC w/auto diff wbc	\$67
6	J2405	Ondansetron hcl injection	\$35
7	81001	Urinalysis auto w/scope	\$48
8	G0378	Hospital observation per hr	\$712
9	99282	Emergency Visit Level 2	\$399
10	99244	Office consultation	\$449
11	87086	Urine culture/colony count	\$77
12	80053	Comprehen metabolic panel	\$266
13	J7030	Normal saline solution infus	\$132
14	71020	Chest x-ray	\$393
15	99213	Established Outpatient Office Visit Level 3	\$262
16	99243	Office consultation	\$323
17	J7050	Normal saline solution infus	\$106
18	J3490	Drugs unclassified injection	\$34
19	J7120	Ringers lactate infusion	\$75
20	90945	Dialysis one evaluation	\$1,468
21	J2175	Meperidine hydrochl /100 MG	\$15
22	93010	Electrocardiogram report	\$25
23	99291	Critical care first hour	\$744
24	94640	Airway inhalation treatment	\$135
25	87880	Strep a assay w/optic	\$83
26	99472	Ped critical care subsq	\$1,099
27	96374	Ther/proph/diag inj iv push	\$267
28	99245	Office consultation	\$517
29	99214	Established Outpatient Office Visit Level 4	\$389
30	J2270	Morphine sulfate injection	\$30

**FIGURE 1** Example of charges from a children's hospital Web site. auto, automated; CBC with auto diff, complete blood count with automatic differential; comprehend, comprehensive; diag, diagnostic; hcl, hydrochloride; infus, infusion; inj, injection; iv, intravenous; MG, milligram; optic, optical immunoassay; Ped, pediatric; proph, prophylactic; scope, microscopy; Ther, therapeutic; subsq, subsequent; wbc, white blood cell.

\$1200–\$15 360); 17 hospitals included discounts for self-pay patients (mean 33%, range 10%–60%) (Table 2). Of the 21 hospitals that provided estimates, 15 were same-day estimates, 5 were within 48 hours, and 1 was within 2 weeks. Of the estimates, 14 included facility fees only (mean \$6718), whereas 7 included facility and professional fees (mean \$7996). Of the 15 hospitals unable to provide an estimate, we were unable to reach an appropriate price estimate representative after >5 attempts ( $n = 8$ ), or we spoke to a representative who could not give an estimate ( $n = 7$ ), most commonly stating that the patient must be registered at the hospital before providing an estimate. Most hospitals required multiple calls and transfers, and the mean final call duration that resulted in an estimate was 8 minutes.

In general, hospital representatives were courteous, knowledgeable, and provided accurate information with the clear goal of educating the caller on the intricacies of health insurance. However, there were exceptions, including difficulty reaching the unit responsible for providing such price

estimates, which for some hospitals seemed to be a single individual. In other calls, hospital representatives provided partially or fully incorrect information about health insurance terminology (eg, “high-deductible plan”).

We submitted price estimate inquiries using an online form at 4 of the 5 hospitals that provided this tool. The excluded online form was solely for international patients. In a 2-week time frame, we received estimates by e-mail from 2 hospitals (\$4239 for facility fee only; \$6823 for facility and professional fees) in 1 and 3 business days, respectively.

### State-based Price Transparency Web Sites

Fifteen (39%) Web sites distinguished between prices for pediatric versus adult care (Table 3). Some sites allowed families to specify age ranges for any diagnosis or procedure of interest ( $n = 5$ ), whereas others provided pediatric age ranges for only select diagnoses and procedures ( $n = 10$ ) (eg, “tonsillectomy and adenoidectomy for patients under 12 years old”). Of the 17 (45%) sites that provided price estimates for a tonsillectomy-adenoidectomy (mean

\$9566, range \$3441–\$20 287), 9 provided pediatric-specific charges (Table 3).

One site had a personalized price estimate tool that requested information on expected care with specified diagnoses and procedures, location, and insurance (Fig 2). Quality data were available on 14 sites; examples include reports on quality indicators developed by the Centers for Medicare and Medicaid Services and the Agency for Healthcare Research and Quality (eg, timely and effective care for diagnoses that primarily affect adults, such as heart attack and stroke). With the exception of pediatric asthma care and pediatric safety, most quality data were not pediatric specific.

### DISCUSSION

Although health care price transparency has gained traction more broadly, our description of pediatric price transparency data is the first to systematically demonstrate that meaningful prices for children's care were not easily obtained or widely available. Less than 1 in 5 freestanding children's hospitals provided prices on their Web sites, the most common



**TABLE 2** Secret Shopper Price Inquires to Children's Hospitals for a Tonsillectomy-Adenoidectomy (*N* = 45)

Overall Availability and Characteristics of Price Estimates	
Provided price estimate, <i>n</i> (%)	30 (67)
Same-day estimate, <i>n</i> (%)	23 (51)
Price estimate, \$, mean (range)	
Facility fee only ( <i>n</i> = 21)	6266 (1200–12 000)
Facility and professional fees ( <i>n</i> = 9)	8071 (3733–15 360)
Specific price estimate phone line inquiry ( <i>n</i> = 9)	
Provided price estimate, <i>n</i> (%)	9 (100)
Same-day estimate, <i>n</i> (%)	8 (89)
Price estimate, \$, mean (range)	
Facility fee only ( <i>n</i> = 7)	5344 (2622–6400)
Facility and professional fees ( <i>n</i> = 2)	8332 (6823–9840)
Call duration in minutes, mean (range)	9 (3–15)
General hospital phone line inquiry ( <i>n</i> = 36)	
Provided price estimate, <i>n</i> (%)	21 (58)
Same-day estimate, <i>n</i> (%)	15 (42)
Price estimate, \$, mean (range)	
Facility fee only ( <i>n</i> = 14)	6718 (1200–12 000)
Facility and professional fees ( <i>n</i> = 7)	7996 (3733–15 360)
Call duration in minutes, mean (range)	8 (2–16)
Online form inquiry ( <i>n</i> = 4) <sup>a</sup>	
Provided price estimate, <i>n</i> (%)	2 (50)
Price estimates, \$	4239 and 6823
Time to receipt of estimate in days	1 and 3

<sup>a</sup> One online request form was excluded because it only applied to price estimates for international patients.

being billed charges. One-third of the hospitals provided tools to help families obtain out-of-pocket estimates. Our secret shopper process found that all 9 hospitals that provided a dedicated phone number for price estimates were able to provide a

personalized price estimate for a tonsillectomy-adenoidectomy with a brief phone call. However, the majority provided an incomplete estimate for a facility fee only, not including professional fees. For a procedure such as a tonsillectomy-

adenoidectomy, not including the professional fee estimate would be a significant underestimation of price for consumers, most of whom likely do not know the distinction between facility and professional fees. Less than half of the state-based price transparency Web sites allowed families to distinguish between pediatric and adult care, and only 1 provided a personalized price estimation tool.

Overall, meaningful price transparency for pediatric care is limited, even more so than the suboptimal data available for adult care.<sup>11</sup> In addition to the varying usefulness of the type of price data presented, another barrier to meaningful price transparency is that health care providers may have reasons for not publishing prices. These include nondisclosure agreements with payers, fluctuating prices, or uncertainty about how to best standardize and communicate highly complex payment and reimbursement structures and rationales to consumers. Additionally, more data on how prices influence pediatric care decisions are needed. For example, 1 study showed families are more likely to choose a less expensive, equally effective pediatric surgery when informed of the price ahead of time.<sup>17</sup> The evidence base in this area, although mixed, is more developed in adult populations.<sup>18</sup>

We found that providing a specific phone line for price estimates could be an effective strategy for consumers to obtain out-of-pocket price estimates from children's hospitals, given the need to individualize estimates to the details of the expected care and a family's insurance coverage (or lack thereof). Although we were able to obtain self-pay out-of-pocket price estimates from some main hospital phone lines, the process was time consuming and involved repeated calls and transfers. Online forms may represent another effective mechanism for providing personalized price estimates, but our sample of hospitals that offered this tool was small. Hospitals with these personalized price estimate tools and infrastructure could serve as settings for much needed research on the most effective ways to deliver price transparency data and the impact of price data on pediatric health

**TABLE 3** Price Transparency Information on State-Based Price Transparency Web Sites (*N* = 38)

Price Transparency Information	<i>n</i> (%)
Distinguishes between prices for pediatric and adult care	15 (39)
Age ranges selectable by consumer for all diagnoses	5 (13)
Age specified or "pediatric" flag listed for specific diagnoses	10 (26)
Provided price estimate for tonsillectomy-adenoidectomy	17 (45)
Billed charges	16 (42)
Out-of-pocket costs	1 (3)
Pediatric procedure specified	9 (24)
Price estimate, \$, mean (range) <sup>a</sup>	9566 (3441–20 287)
Personalized cost estimation tool available, <sup>b</sup>	1 (3)
Quality data available	14 (37)

<sup>a</sup> For the site that listed out-of-pocket costs, the estimate obtained was for an uninsured patient.

<sup>b</sup> These tools were customizable, algorithm-based, interactive tools.

## Health Cost for Consumers - Insured Patients

Tonsillectomy with Adenoidectomy (outpatient) ▼

Postal code

Distance

Entire State

10 Miles

20 Miles

50 Miles

100 Miles

250 Miles

Enter your zip code and select the Radius from which you want to view selected hospitals and other medical facilities.

Select your insurance carrier

Anthem - NH

CIGNA

Harvard Pilgrim HC

Other Insurance

Select your insurance plan type

Health Maintenance Organization (HMO)

Other Insurance Plans

Enter your level of benefit deductible: \*

\$  .00

Deductible amounts refer to individual coverage, not family coverage. If the plan has more than one deductible, use the highest level to determine the appropriate policy type.

Enter level of Coinsurance: \*

%

If unsure, leave 0.

**FIGURE 2** Example of a personalized cost estimate tool from a state-based price transparency Web site.

care choices. For example, providing estimates that include both facility and professional fees, using lay language when listing prices for services, and indicating high quality and/or high value services could be mechanisms to make price data more meaningful to consumers.

The dollar amounts quoted from the secret shopper calls in this study only apply to uninsured children and not those covered by Medicaid or private insurance. Although we were unable to perform secret shopper phone calls as an insured family, it is conceivable that the availability of price information that a self-pay family received is a reasonable proxy for a children's hospital's initiatives around price transparency overall. If a hospital was unable to quote a self-pay family a price for anticipated care, it is unlikely that it would be able to provide a personalized estimate to an insured family that accounted for all

of the variables involved in that family's coverage plan. Furthermore, although the majority of children in the United States are insured (~95% overall), wide variation exists by state. For instance, 13% of children 0 to 18 years old are uninsured in Alaska, and only 2% lack insurance in Illinois.<sup>19</sup> Despite having insurance, children may be significantly underinsured. For example, the amount owed by families with high-deductible health plans may approximate the amount owed by a self-pay family if the insured family has not paid a significant amount toward its deductible for the year.

Consumers were unable to consistently distinguish between prices for pediatric and adult care on the majority of state-based price transparency sites. Many of the Web sites appeared to use a similar format, which suggests that commonly used price estimate algorithms are unlikely to incorporate patient age. Of note, the

Healthcare Cost and Utilization Project provides national charge data for inpatient stays with the capacity to limit the query to children.<sup>20</sup> Pediatric-specific quality data were also sparse, which may be due to the challenges of using nationally endorsed pediatric quality measures.<sup>9,10</sup>

This study has several limitations. It is possible that we missed price transparency elements when auditing the study Web sites despite double coding by researchers experienced in navigating them. If missed, it would be unlikely that these elements would be readily apparent to families. Web site content may have also changed during the study period. In addition, we were unable to audit Web sites managed by health insurance plans because they restrict access to plan members. Private insurance plan price transparency Web sites are likely important sources of information that could complement the data that insured families obtain from state-based and children's hospital sites, although uptake of these tools has been slow.<sup>2,18,21,22</sup> Furthermore, they may offer a superior customizable consumer experience compared with state-based and children's hospitals' Web sites if they offer tools that allow families to estimate out-of-pocket costs and factor in the terms of coverage and the amount of deductible paid at the time of service.<sup>23</sup> Similarly, we chose not to audit other sources of price information that were outside the scope of this study, such as crowd-sourced, foundation-supported, or advertisement-sponsored Web sites.

Our findings suggest that price data specific to pediatric care is not widely available to consumers and that existing price transparency information and tools vary. Personalized out-of-pocket price estimates were provided through mechanisms such as dedicated phone lines and online forms, which will potentially be more useful to families than the commonly reported average billed charges. Future research should investigate the impact of price transparency data on families' decision-making, including if price affects pediatric and adult health care decision-making differently and how to most effectively

identify and communicate high-value care to families.

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