BRIEF REPORT

Pediatric Hospitalist Comanagement Survey of Clinical and Billing Practices

Katherine M. O'Connor, MD,[a] David G. Zipes, MD,[b] Joshua K. Schaffzin, MD, PhD,[c] Rebecca Rosenberg, MD, MPH[d]

ABSTRACT

Surgical comanagement is an increasingly common practice in pediatric hospital medicine. Information about the structure and financing of such care is limited. The aim of the researchers for this study was to investigate pediatric hospitalist surgical comanagement models and to assess pediatric hospitalist familiarity with and patterns of billing for surgical patients. We conducted a cross-sectional cohort web-based survey of pediatric hospitalists using the American Academy of Pediatrics' Section on Hospital Medicine listserv. In our study ($N = 133$), we found wide variation in our cohort in surgical patient practice management, including program structure, individual billing practices, and knowledge regarding billing practices. Even for pediatric hospitalists with comanagement service agreements between surgeons and pediatric hospitalists, there was no increased awareness or knowledge about reimbursement or billing for surgical patients. This global lack of knowledge in our small but diverse sample suggests that billing resources and training for pediatric hospitalists practicing comanagement of surgical patients are needed.

[a]*Division of Pediatric Hospital Medicine, Children's Hospital at Montefiore, Bronx, New York;* [b]*Peyton Manning Children's Hospital, Indianapolis, Indiana; Henry Community Health Center, New Castle, Indiana;* [c]*Division of Hospital Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; and* [d]*Department of Pediatrics, NYU School of Medicine and Hassenfeld Children's Hospital at NYU Langone Medical Center, New York, New York*

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Address correspondence to Katherine M. O'Connor, MD, Division of Pediatric Hospital Medicine, Children's Hospital at Montefiore, 3411 Wayne Ave, 9th Floor 953, Bronx, NY 10467. E-mail: koconnor@montefiore.org

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Comanagement, defined as a system of care featuring "shared responsibility, authority and accountability,"[1] has become increasingly common over the last 15 years in both adult and pediatric patients.[2–4] In the most recent Society of Hospital Medicine Survey in 2014, 80% of responding pediatric hospitalist groups ($n = 40$) reported caring for primary surgical patients, mirroring the existing practice in internal medicine.[1] Comanagement services vary by hospital setting and availability of pediatric specialists and range from managing nonsurgical comorbidities to providing nearly all on-site preoperative and postoperative management.[5] There is emerging literature in which researchers suggest improved clinical outcomes for pediatric surgical patients who are comanaged by pediatric hospitalists.[6–9]

The growth of comanagement is catalyzed by multiple factors, including the medical complexity of pediatric patients with multiple comorbidities, the need to provide bedside care and communication in cases in which surgeons may be off-site, and the need to provide pediatric expertise when surgeons or facilities may not have pediatric-specific training or expertise.[10–13] The American Academy of Pediatrics (AAP) has recommended pediatric-trained provider involvement for patients <14 years of age or <40 kg in weight undergoing a procedure performed by a surgical provider who does not have routine pediatric experience.[14]

Little has been published about the actual structure of pediatric hospitalist comanagement programs, reimbursement, and billing. The Society of Hospital Medicine supports a written service agreement between hospitalists and surgeons to address issues, including which team writes orders and manages which aspects of care, and billing and reimbursement issues.[5] However, prevalence of written agreements and their impact on care has not been studied. In addition, because comanagement reimbursement varies from state to state for Medicaid and private insurance as well as by type of comanagement (sharing of global surgical fee, consultant care, comanagement), knowledge of such state

TABLE 1 Pediatric Hospitalist Respondents With Complete Comanagement Billing Surveys, 2014

Practice Characteristics	*n*	%
Type of hospital ($n = 98$)		
Free standing children's hospital	29	30
Children's hospital within a larger hospital	28	28
Community hospital	30	31
More than 1 setting	7	7
Other description (university, tertiary)	4	4
No. of pediatric beds in hospital ($n = 98$)		
<20	21	21
21–60	29	29
61–100	19	19
101–200	8	8
>200	21	21
No. of FTE pediatric hospitalists in group ($n = 98$)		
<5	35	36
6–10	28	29
11–15	13	13
16–20	6	6
>20	16	16
Zip code zone ($n = 63$ unique codes)[15]		
First digit: 0–1 (Northeast: CT, DE, MA, ME, NH, NJ, NY, PA, RI, VT)	15	24
2–3 (Southeast: AL, FL, GA, MS, NC, SC, TN, VA, WV)	9	14
4–6 (Midwest: IL, IN, KS, KY, MT, MI, MN, MO, NE, ND, OH, SD, WI)	15	24
7 (South: AR, LA, OK, TX)	8	13
8–9 (West/Southwest: AK, AZ, CA, CO, HI, ID, NM, NV, OR, UT, WA, WY)	16	25
Comanagement program characteristics		
Dedicated surgical hospitalists ($n = 98$)	13	13
Predominant surgical partners ($n = 97$)		
Adult-trained surgeons	20	21
Pediatric-trained surgeons	76	78
Comanage/consult with pediatric residents ($n = 97$)	41	42
Comanage/consult with surgical residents ($n = 97$)	54	56
Automatic arrangements with surgical specialties to perform services without a specific request ($n = 100$)	44	44
Written service agreement with surgeons ($n = 100$)	29	29
Percent of daily hospitalist census that is surgical ($n = 98$)		
<20%	64	65
20%–50%	28	29
51%–75%	0	0
>75%	6	6

TABLE 1 Continued

Practice Characteristics	*n*	%
Source of funds to support care for surgical patients ($n = 87$)		
General hospital funds	24	28
General surgical funds	2	2
Surgical global fee	7	8
Hospitalist billing reimbursement	51	59
Don't know	19	23
Billing ($n = 99$)		
Contract with surgeons to receive portion of global fee	1	1
Surgeons use modified code (54) to exclude postoperative care	0	0
Aware of pediatric hospitalist reimbursement for care of surgical patients	23	23
Aware of state/institutional guidelines for surgical comanagement/consultation billing	10	10

FTE, full-time equivalent.

and institutional guidelines is important for how pediatric hospitalists bill for their services. Accurate billing that is reimbursed is crucial to the fiscal responsibility and likely the financial viability of comanagement.[16] As hospitals and providers are held to a higher level of accountability for both quality and cost in health care, data demonstrating the efficacy of comanagement are needed.

The Subcommittee on Surgical Care of the AAP Section on Hospital Medicine (hereafter referred to as the Subcommittee), a nationally representative group of pediatric hospitalists and surgeons, has been formed in part to understand and improve comanagement of surgical patients by pediatric hospitalists. The Subcommittee performed a hypothesis-generating survey study with the objective to describe variation in pediatric hospitalist-surgeon comanagement models and to elucidate pediatric hospitalist familiarity with and patterns of billing for surgical patients.

METHODS

This study was a cross-sectional cohort survey study of current comanagement models and knowledge of billing practices among active pediatric hospitalists. Participants were recruited in 2 ways from an overlapping population of predominantly US-based pediatric hospitalists: (1) distribution of an in-person paper survey and paper recruitment flier with a Quick Response scannable link to an online system survey at the 2014 Pediatric Hospital Medicine meeting in Orlando, Florida, and (2) via an electronic link through the AAP Section on Hospital Medicine listserv.[17] The listserv has >2500 members who self-identify as a pediatric provider, typically a pediatrician, who works primarily (≥50% of the time) in or is considering a career in pediatric inpatient or hospital medicine. Participants were recruited with 3 postings on the listerv between July and September 2014. The online system data were collected anonymously by using www.SurveyMonkey.com (Survey Monkey, Inc, San Mateo, CA). Paper surveys were manually entered into the online system and verified for accuracy.

The survey was iteratively developed and tested within the Subcommittee membership and piloted with non-Subcommittee members for readability. The survey addressed general surgical comanagement, comanagement clinical services provided (eg, pain management, fluids), billing code practice, awareness of reimbursement mechanisms for surgical comanagement, and basic demographic information. We used presence or absence of written service agreement as a marker for a more formal comanagement program. For data analysis, we used basic descriptive statistics and χ^2 analysis using Stata/SE version 13.1 (StataCorp LLC, College Station, TX), with significance defined as $P < .05$.

RESULTS

There were 133 paper and electronic responses to the survey (response rate of ~5% for the listserv), 98 of which were complete and reported providing care for surgical patients (Table 1). Most respondents reported inpatient postoperative care (92%) and/or preoperative care (81%). Respondents were from a diverse group of hospital settings, hospital sizes, and practice group sizes from 63 unique zip codes. Of the 69 reported zip codes, there were only 6 duplicated zip codes (6/69 = 8.7%), suggesting program overrepresentation of <10% in the 62 responses without zip code data.

Most respondents in this cohort provide comanagement and/or consultation for surgical inpatients, and only 13% have "at least 1 dedicated hospitalist" for surgical comanagement, in addition to the general pediatric hospitalist team (Table 1). Nearly 80% in this sample described their primary surgical partners as pediatric trained. Approximately half of respondents reported that pediatric residents also managed their surgical patients, and approximately half of respondents in this cohort reported that surgical residents also managed their surgical patients. Sixty-five percent of the cohort reported that <20% of their daily hospitalist census is composed of surgical patients.

Nearly all respondents ($n = 98$) in the cohort reported comanaging for fluid management (98%), pain management (93%), medication dosing (94%), and antibiotics (89%), with only 14% comanaging wound care. Other reported reasons for comanagement included fever, chronic medical concerns, nutrition, seizures, coordination of care, and respiratory distress. The most common surgical conditions that respondents reported comanaging and/or consulting were appendectomy (59%), spinal fusion (59%), other orthopedic procedures (73%), tonsillectomy and adenoidectomy (51%), and other ear, nose, and throat procedures (51%).

Most respondents in this sample reported hospitalist billing reimbursement as a source of funds to support comanagement, whereas 28% of the cohort reported hospital funds, 10% reported surgical funds, and ~25% did not know (Table 1). A quarter of respondents in this cohort reported awareness about reimbursement for their surgical care. Only 10% of respondents in this cohort reported awareness of state and institutional guidelines for surgical comanagement and consultation billing.

Current procedural terminology billing codes[18] reported by this cohort to be used varied most on the first encounter with a comanaged patient and on discharge, as noted in Fig 1. On the first day of patient care, 32% of cohort respondents used an admission billing code (99221–99223), 7% used an observation code (99218–99220), 29% used a consultation code (99251–99253), and 12% used a comanagement code (99231–99233). On the subsequent day of management, 75% of cohort respondents reported using a comanagement and/or subsequent care code (99231–99233) most frequently. On the day of discharge, 33% report using a discharge code (99238–99239) and 34% a comanagement and/or subsequent care code (99231–99233). Approximately 15% of respondents in this sample reported not entering billing codes.

In terms of practice management, 44% of respondents in this cohort responded "yes" to the following question: "Do you have an 'automatic' arrangement with any surgical specialties whereby you perform services without a specific request?" (Table 1) However, only 29% of respondents in this sample reported having a written service agreement for comanagement with their surgical partners. The presence of a written agreement was more likely for respondents with a daily census of more than 20% surgical patients ($P = .01$), but it was not associated with hospital type (Table 2). In this sample, pediatric hospitalists in programs with a written comanagement agreement, compared with those without, reported similar low awareness of state and institutional comanagement billing guidelines (14% vs 8%, $P = .71$) and of their own comanagement reimbursement billing and funding revenue (28% vs 21%, $P = .51$).

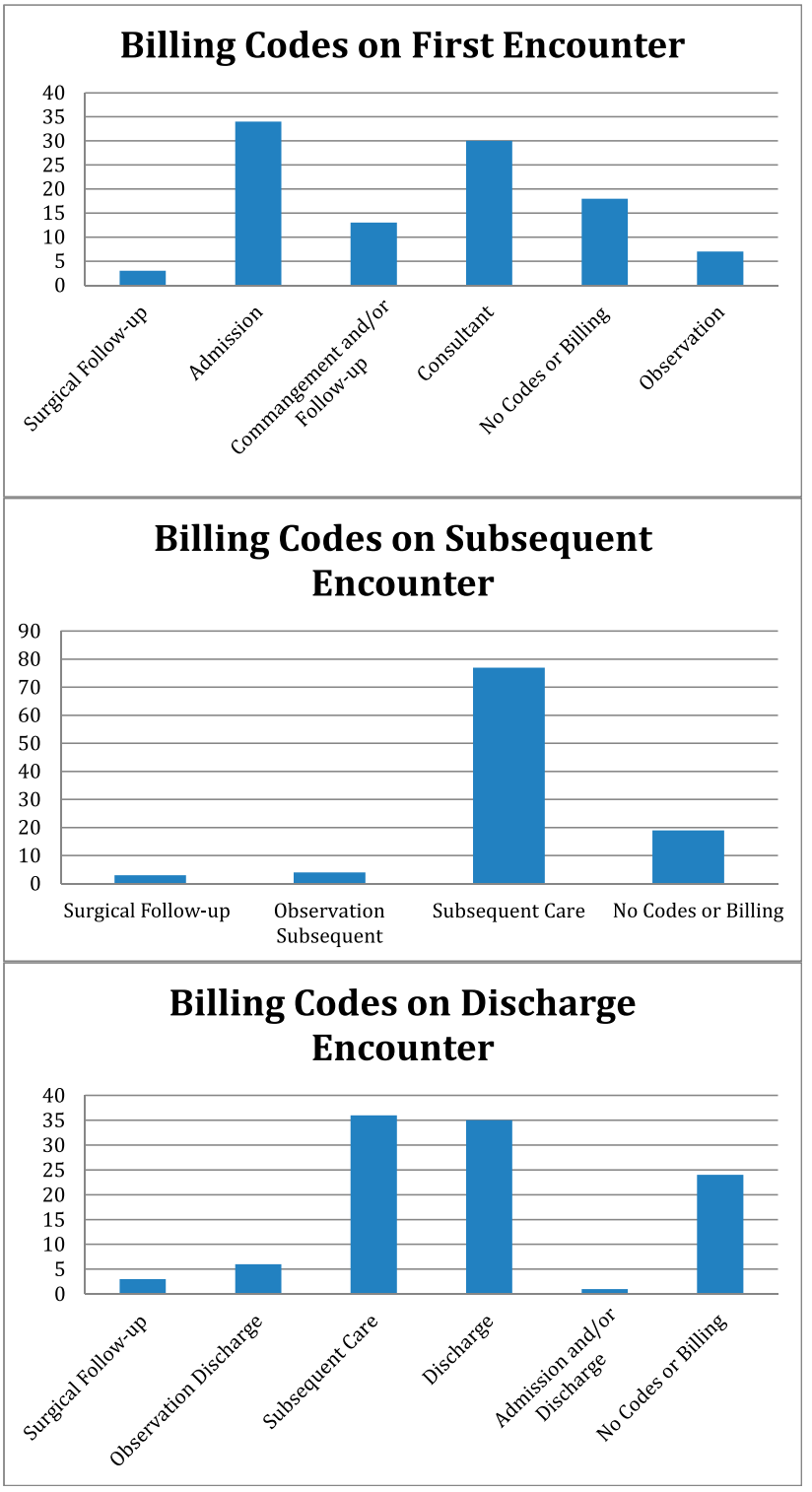

FIGURE 1 Billing codes used by day of encounter.

DISCUSSION

In this first ever survey study of pediatric hospitalist surgical comanagement billing practice and knowledge, we

TABLE 2 Practice Factors and Billing Knowledge Associated With a Written Comanagement Agreement

Practice or Program Factor	Written Comanagement Agreement, %		P, χ^2
	Present (n = 29)	Absent (n = 71)	—
Census >20% surgical	50	19	.01*
Dedicated surgical hospitalists	21	10	.13
Hospital setting			
Freestanding children's hospital (n = 34)	32	68	.71
Hospital within hospital (n = 34)	30	70	—
Community hospital (n = 30)	23	77	—
Aware of state and/or institutional guidelines for surgical comanagement and/or consultation billing (n = 100)	14	8	.71
Aware if billing for surgical patients is reimbursed (n = 100)	28	21	.51

—, not applicable.
* $P < .01$

found wide variation in practice management, including program structure, individual pediatric hospitalist billing practices, and knowledge regarding billing practices in this cohort.

We had examined whether the presence of a written service agreement (a formal document outlining responsibilities between pediatric hospitalists and other services) existed and whether this document would be indicative of a more established program and thus one with more global awareness of billing and reimbursement. Less than one-third of respondents in the sample report using written comanagement agreements, which has been suggested as a best practice for comanagement.[1,8,9] Even among pediatric hospitalists in this sample with service agreements, there was no difference in awareness of reimbursement for comanagement or knowledge of guidelines for comanagement billing. Our results suggest that for this sample, there is a global lack of knowledge among pediatric hospitalists of both state and institutional billing guidelines as well as actual reimbursement. Although surgical comanagement is common, its growth may have increased without individual awareness of billing structure for these surveyed pediatric hospitalists.

The major limitation of this study is that the study population is small, with a low response rate from the listserv (5%). Because of this low response rate and small cohort size, the results are not generalizable to the entire pediatric hospitalist community. Also, the study was underpowered for further in-depth analysis of subgroups. In addition, only 69 respondents provided zip codes, so it is possible that the remaining respondents were from the same institution, but low rates of duplication among provided zip codes (<10%) make that less likely. However, the respondents are part of a convenience sample of likely interested, comanagement-oriented pediatric hospitalists, and with this study, we suggest that even this interested group is uninformed about comanagement billing and reimbursement.

The financial viability of comanagement and pediatric hospital medicine program sustainability will be impacted by sound billing practice, which makes knowledge about billing an imperative.[5] Also, by not having clear guidelines and education for billing for comanagement, hospitalists could be putting themselves and their hospitals at risk for audits by payers and could inadvertently double bill, under bill, and/or increase costs for self-pay patients.

Future steps to improve comanagement practice and billing should involve collaboration with surgical partners at both local and national levels, building a dialogue around the implications of comanagement, and creating billing resources and training for pediatric hospitalists who are involved in the care of surgical patients.

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