

Documentation of Sexual History in Hospitalized Adolescents on the General Pediatrics Service

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ABSTRACT

OBJECTIVES: To determine the frequency of sexual history taking and the associated characteristics of hospitalized adolescents in the pediatric hospitalist service.

METHODS: A retrospective chart review of adolescents 14 to 18 years old who were admitted to the pediatric hospitalist service at an urban, academic children's hospital in the Northeast from 2013 to 2015 was conducted. Repeat admissions, admissions to specialty services, and charts that noted impairment because of psychosis, cognitive delay, or illness severity were excluded. For charts that met the criteria, the admission history and physical was carefully reviewed for a notation of sexual history. For those with documentation, sexual activity status and a risk level assessment were recorded. Patient demographics and admission characteristics were extracted. χ^2 tests and logistic regression were used to examine differences between those with sexual history and those without.

RESULTS: A total of 752 charts met the criteria for inclusion. The majority of adolescents were girls ($n = 506$; 67.3%); the mean age was 15.7 years ($SD = 1.2$). Girls had 2.99 (95% confidence interval [CI] 2.18–4.11) higher odds of documentation than boys, and older adolescents had 1.41 (95% CI 1.03–1.91) higher odds than younger adolescents. Documentation did not differ significantly on the basis of admission type (medical or psychiatric), admission time, patient race and/or ethnicity, or provider gender. Among those with a documented sexual history, risk-level details were often omitted.

CONCLUSIONS: Sexual history taking does not occur universally for hospitalized adolescents. Girls were screened more often than boys despite similar rates of sexual activity. The inpatient admission may be a missed opportunity for harm-reduction counseling and adherence to sexually transmitted infection testing guidelines.

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Sexual health is an important factor in the health of adolescents in the United States. Approximately half of all new sexually transmitted infections (STIs) occur among 15 to 24 year olds.¹ *Chlamydia* and *gonorrhea* are disproportionately common among adolescent and young adult women^{2,3} and are related to the differences in female anatomy, a higher prevalence of asymptomatic infections, and the likelihood of mistaking symptoms as physiologic discharge in women.⁴ A lack of safe sex practices contributes to the prevalence of STIs in adolescents. Among sexually active high school students, ~40% do not use condoms, and 14% have had 4 or more sexual partners.⁵ Additionally, the United States still has 1 of the highest teenage pregnancy rates among developed countries. Although adolescents commonly use methods with relatively high typical-use failure rates, such as condoms, withdrawal, and oral contraceptive pills,⁶ many will select more effective methods, such as intrauterine devices and implants, when counseling is provided and these options are affordable and readily available.⁷

Pediatricians play an important role in the sexual health of adolescents, but only ~40% of adolescents report discussing sexual health with their primary care providers.^{8–10} Although adolescents do endorse a desire to have these conversations with their doctors,^{9,11,12} doctor-initiated discussion is required for these sensitive topics.¹³ An additional barrier to sexual health management in the primary care setting is adolescents' lack of regular attendance at health supervision visits, particularly older adolescents, and the use of urgent and/or emergency care for a large portion of their care.^{14–17} Inpatient units present a potential opportunity to engage adolescents in preventive health topics while completing treatment for acute illness. Hospitalized adolescents report a willingness to address sexual health and obtain education and/or counseling during their admissions, and approximately half report never discussing sexual health with a primary care provider.¹⁰ To our knowledge, the frequency of sexual risk assessments and sexual health discussions with hospitalized adolescents

has not been examined. In this study, we aimed to assess sexual history documentation for adolescent inpatients as an estimate of sexual risk screening at the time of hospital admission. Our secondary aim was to examine factors associated with sexual health documentation, including patient age and gender, provider gender, and admission type and timing.

METHODS

Study Setting

A retrospective chart review was conducted of adolescent patients 14 to 18 years old who were admitted to the pediatric hospitalist service at an urban, academic children's hospital from March 2013 to March 2015. At this institution, the vast majority of general pediatric patients were attended by pediatric hospitalists. Adolescents with general medical diagnoses, as well as those awaiting placement in an inpatient psychiatric facility, are admitted to this service. Patients in the hospitalist service are seen initially by resident physicians and supervised by the pediatric hospitalist attending physicians. The history and physicals (H&Ps) were completed electronically in an electronic health record (EHR). The study time period was chosen because of uniformity in the EHR documentation system during the study dates. During this time, a social history section existed within the H&P template, and there was nonrequired space for sexual history. Patients who were admitted during the study time period were compiled from the hospital billing database. The study was approved by the hospital's institutional review board.

Inclusion and Exclusion

Charts of adolescents 14 to 18 years old who were admitted only to the pediatric hospitalist service during the designated time period were included. This age group was selected because it represents high school-aged children who, according to our state's law, may consent to sex (age of consent is 16 years; however, a close-in-age exemption exists for 14 and 15 year olds). Patients who were admitted to the pediatric hospitalist service were chosen because they have the most consistency in who

conducted the admission H&P, and they represent patients with general medical and psychiatric complaints. Patients who were hospitalized in surgical and pediatric specialty services were excluded. A chart was excluded if the encounter represented a repeat admission within the study period (only the first admission was included) or the patient was not admitted initially to the hospitalist service. These 2 exclusions were intended to eliminate H&Ps that may have social history documentation that had been collected at a previous admission and/or by a different provider from the one conducting the admission. Additionally, charts were excluded if patients were not able to provide reliable responses either because of cognitive impairment, severe illness, current psychosis, refusal to talk with the physicians, on the basis of the admission diagnoses, past medical history, and/or notation within the H&P. Charts in which the H&P was not able to be recovered through the EHR were excluded.

Data Collection

A research assistant (RA) served as the primary chart reviewer. The RA was trained by a principal investigator (A.R.), who supervised the first 10 charts and then reviewed charts that were flagged by the RA with any questions. There was frequent communication between the RA and the principal investigator regarding the data from reviewed charts. Discrepancies were corrected as reviewed. A second reviewer, a medical student on the research team (E.T.), was also trained by the principal investigator and reviewed 10% ($n = 75$) of the eligible charts to determine interrater agreement ($\kappa = 0.93$). The reviewer first checked each hospitalization record to ensure that the record met inclusion and exclusion criteria. For charts that met inclusion criteria, the admission H&Ps in the EHR were examined for any documentation of patients' sexual history. The reviewer read through the full H&P and additionally conducted a keyword search for "sex" by using a search tool which includes all variations in spelling and word ending. The primary outcome of interest was the presence or absence of sexual history documentation in any section of the H&P,

which was recorded as a binary (yes or no) variable. If sexual history was documented, the reviewer noted which section or sections the sexual history was found in the H&P, such as history of present illness, social history, assessment and/or plan, or attending attestation. For patients with documentation, the reviewer recorded whether the patients endorsed being sexually active. If sexual activity was endorsed, the reviewer additionally recorded whether the following accompanying risk information was included: gender of partner, number of partners, use of condoms, and use of contraception.

Demographic information was extracted from the hospital's billing database, including age, gender, race and/or ethnicity, insurance status, and admitting diagnosis. Admission diagnoses were grouped by system category, and a binary variable of admission type was also created to categorize medical and psychiatric admissions. The charts of patients who were admitted because they were medically unstable or needed further medical monitoring after the ingestion of substance for the purposes of self-harm were coded as medical. Patients who had been medically cleared before admission and who were awaiting psychiatric care were coded as psychiatric. The reviewer recorded the gender of the documenting physician and the time stamp of the admission note. We hypothesized that time of day may be significant in that overnight admissions might preclude one from removing a parent from the room, and resident physician coverage is more limited. The distribution of admission times was found to have a bimodal distribution, which we grouped as daytime (8:00 AM–11:59 PM) and nighttime (12:00 AM–7:59 AM).

Data Analysis

We present descriptive statistics using counts and frequencies. A χ^2 test or Student's *t* test was used to assess significant differences in patient (patient gender, age, race and/or ethnicity, and insurance type) and admission (medical or psychiatric admission, admission time, and provider gender) characteristics between

patients with sexual history documentation and those without. A sensitivity analysis was conducted to examine sexual history documentation for each category of admission diagnoses. Multivariable logistic regression was performed, including variables with $P < .1$ on bivariate analyses. Interactions between patient and provider gender were explored.

RESULTS

During the study period, 1041 charts were identified by the hospital billing database as adolescents admitted to the hospitalist service. After chart review, 287 (27.6%) were excluded (Fig 1). The final data set consisted of 752 charts, which represented 752 discrete adolescents admitted to the hospitalist service during the study time period.

There were disproportionately more girls (67.3% girls and 32.7% boys), and the mean age was 15.7 years (SD 1.17). The majority of patients were non-Hispanic white and were almost evenly split between publicly and privately insured. There were more medical admissions than psychiatric; however, approximately one-third were admitted for psychiatric reasons (Table 1).

Among the adolescents included in our study, a sexual history was included in the admission H&Ps of 62.4% of the charts ($n = 469$). Among this subset with sexual history documentation, 88.7% ($n = 416$) of charts had this documentation in the social

history section of the H&P. Only 1.5% of charts had sexual history exclusively in attending attestations. The sexual history was documented more often in the charts of adolescent girls compared with boys (71.0% vs 44.7%; $P < .001$). Additionally, older adolescents (age 16–18 years) more commonly had sexual history documentation than younger adolescents (age 14–15 years; 65.7% vs 58.4%, respectively; $P = .04$). There was no significant difference in sexual history documentation for those admitted for psychiatric care compared with those for physical complaints (66.9% vs 60.2%, respectively; $P = .07$; Fig 1). When stratified by admission type, the difference in boys' and girls' sexual history documentation persisted for medical admissions (41.2% vs 70.7%; $P < .001$) and those with psychiatric admissions (54.7% vs 71.4%; $P = .015$). The diagnosis categories with the highest frequency of sexual history documentation were genitourinary, gastrointestinal, and ingestions. However, these groups had proportionately more girls, particularly for genitourinary (100%) and gastrointestinal (76.9%), compared with the groups with less frequent sexual history documentation (respiratory, 58.3%; skin and/or musculoskeletal, 44.6%; and other, 56.9%), indicating that the collinearity between gender and these diagnoses would render the inclusion of both redundant in our prediction model. There was no association

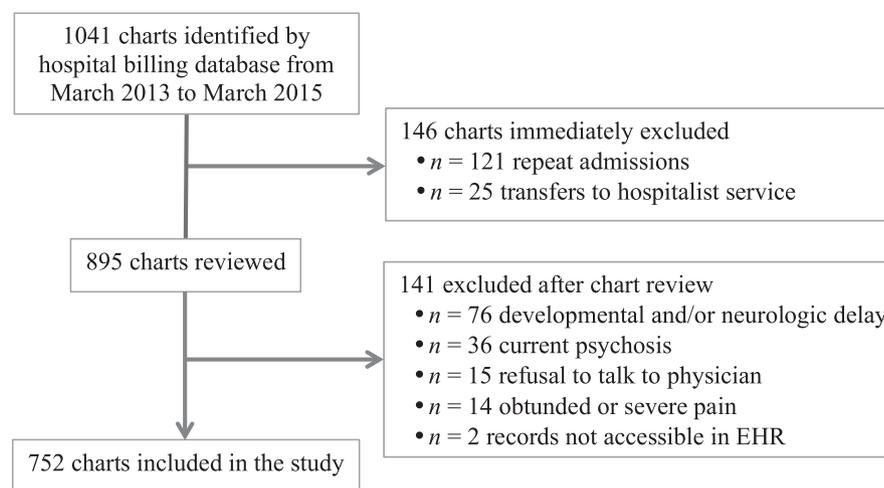


FIGURE 1 Flow diagram of the inclusion and exclusion of charts.

TABLE 1 Demographic Information for All Included Patients and Frequency of Sexual History Documentation by Patient and/or Encounter Characteristics

Characteristic	All Patients, ^a <i>n</i> = 752	Sexual History Documented, <i>n</i> = 469	Sexual History not Documented, <i>n</i> = 283	<i>P</i>
Patient gender, <i>n</i> (%)				
Male	246 (32.7)	110 (44.7)	136 (55.3)	<.001
Female	506 (67.3)	359 (70.9)	147 (29.1)	
Mean age, <i>y</i> (SD)	15.7 (1.17)	15.7 (1.15)	15.5 (1.19)	.02
Age category, <i>n</i> (%)				
Younger (14–15 <i>y</i>)	341 (45.3)	199 (58.4)	142 (41.6)	.04
Older (16–18 <i>y</i>)	411 (54.7)	270 (65.7)	141 (34.3)	
Race and/or ethnicity, <i>n</i> (%)				
Hispanic	162 (21.5)	103 (63.6)	59 (36.4)	.98
Non-Hispanic white	475 (63.2)	295 (62.1)	180 (37.9)	
Non-Hispanic black	79 (10.5)	49 (62.0)	30 (38.0)	
Asian American	16 (2.1)	9 (56.3)	7 (43.7)	
Multiracial or other	20 (2.7)	13 (65.0)	7 (35.0)	
Insurance, <i>n</i> (%)				
Private	370 (49.2)	234 (63.2)	136 (36.8)	.66
Public	357 (47.5)	220 (61.6)	137 (38.4)	
Uninsured	14 (1.9)	7 (50.0)	7 (50.0)	
Unknown	11 (1.5)	8 (72.7)	3 (27.3)	
Admission type, <i>n</i> (%)				
Medical	511 (68.0)	307 (60.1)	204 (39.9)	.06
Psychiatric	241 (32.0)	162 (67.2)	79 (32.8)	
Medical diagnosis category, <i>n</i> (%)				
Gastrointestinal	134 (26.2)	100 (74.6)	34 (25.4)	<.001
Skin and/or musculoskeletal	92 (18.0)	43 (46.7)	49 (53.3)	
Neurologic	65 (12.7)	39 (60.0)	26 (40.0)	
Respiratory	48 (9.4)	12 (25.0)	36 (75.0)	
Ingestion	38 (7.4)	28 (73.7)	10 (26.3)	
Genitourinary	35 (6.9)	34 (97.1)	1 (2.9)	
Ear, nose, and/or throat	34 (6.7)	19 (55.9)	15 (44.1)	
Other	65 (12.7)	32 (49.2)	33 (50.8)	
Admission time, <i>n</i> (%)				
Daytime	213 (28.3)	132 (62.0)	81 (38.0)	.89
Overnight	539 (71.7)	337 (62.5)	202 (37.5)	
Admitting physician gender, <i>n</i> (%)				
Male	261 (34.7)	157 (60.2)	104 (39.8)	.36
Female	491 (65.3)	312 (63.5)	179 (36.5)	

^a Percentages reported are within each category (column percent).

between sexual history documentation and patient race, ethnicity, insurance type, admission time, or physician gender on bivariate analyses (Table 1). The interaction between patient and provider gender was also not significant. Adjusting for key variables with $P \leq .10$ (gender, age, and admission type), girls had 2.99 (95% CI 2.18–4.12) greater odds of sexual history

documentation than boys, and older adolescents had 1.41 (95% CI 1.03–1.91) greater odds than younger adolescents (Table 2).

Among these patients with sexual history documentation in their charts, 50.5% ($n = 237$) were noted to be sexually active. Within this subset, there was no difference in sexual activity by gender or admission

type, although sexual activity was endorsed more often by older adolescents (Table 3).

There was variable documentation of safe sex practices or level of risk-taking within the H&Ps of those patients who reported being sexually active ($n = 237$). Condom use (or nonuse) was documented in 56.1% ($n = 133$) of sexually active patients' charts, with a similar frequency for girls and boys

TABLE 2 Unadjusted and Adjusted Odds of Sexual History Documentation in the Admission H&P

Characteristic	Unadjusted Odds	Adjusted ^a Odds Ratio
Patient gender		
Male	1.00 (reference)	1.00 (reference)
Female	3.02 (2.20–4.14)	2.99 (2.18–4.11)
Age category		
Younger	1.00 (reference)	1.00 (reference)
Older	1.37 (1.02–1.84)	1.41 (1.03–1.91)
Admission type		
Medical	1.00 (reference)	1.00 (reference)
Psychiatric	1.36 (0.99–1.88)	1.26 (0.90–1.75)

^a Adjusted for gender, age category, and admission type.

(56.5% versus 55.9%, respectively; $P = .84$). The number of sexual partners was documented in 39.2% ($n = 93$) of charts (41.4% of girls' and 31.4% of boys' charts; $P = .19$). The use of contraception other than condoms was documented in 25.7% ($n = 61$) of charts, all of which belonged to female patients. Therefore, no sexually active boys' charts included this information, and 33% of sexually active girls' charts did.

DISCUSSION

Our data suggest that sexual history taking is not standard practice when an adolescent patient is admitted. In our study sample, gender was a factor driving documentation despite no statistical difference in the frequency of sexual activity reported by gender either in our data set or national studies.¹⁸ Older adolescents were more likely to have their sexual history documented, but there was no significant association with type of admission (medical versus psychiatric). Overall, findings

suggest that the implementation of a standard practice for sexual health history taking in the inpatient setting could improve the current status. This may present a valuable opportunity for sexual health management and counseling for all adolescents.

Consistent with previous literature,¹⁹ girls in our study were interviewed about their sexual history 3 times more often than boys. This finding may reflect providers' knowledge that adolescent girls incur more severe consequences of risky sexual behavior, such as unintended pregnancy, ectopic pregnancy, or pelvic inflammatory disease. Although increased sexual health screening in a vulnerable population is logical, assessing risk disproportionately in adolescent girls may perpetuate the notion that they are the ones responsible for pregnancy and STI prevention in their relationships. Furthermore, it suggests that adolescent boys may not be getting sufficiently screened nor are they provided

appropriate sexual health information from providers in general. Our findings suggest some impact of presenting diagnoses, with sexual history documented for nearly all of the patients with genitourinary complaints (who were all girls). Although this screening is imperative for key diagnostic and treatment decision-making for these patients, our results show the disparity in history taking for those admitted for non-genitourinary complaints, and thus highlighting a missed opportunity for counseling and teenager-centered care.

Older age was associated with increased sexual history screening. Although older teenagers are indeed more likely to be sexually active,²⁰ screening for sexual activity in younger teenagers is an excellent opportunity to prevent risky future behavior as well as normalize these discussions,²¹ particularly because early sexual debut is highly associated with increased sexual risk behaviors and negative health outcomes.^{22,23}

It is concerning that one-third of the adolescents with psychiatric diagnoses were not screened for sexual health. These adolescents are an extremely high-risk group exhibiting high levels of sexual risk behaviors and substance use that can contribute to unsafe sexual practices.^{24,25} Additionally, adolescents with psychiatric diagnoses use the emergency department (ED) for care more often than those without mental health concerns,¹⁶ which reduces interface with primary care providers. Therefore, the inpatient visit represents a valuable intervention point for screening and preventative care for this high-risk population; however, our data demonstrate that it not consistently used for this purpose.

Many factors may contribute to the lack of universal sexual history taking. Limited time may force providers to eliminate sexual history screening in favor of focusing on the elements of the history that are more pertinent to the presenting complaint, particularly in instances of more severe illness. In addition, pediatric residents often do not feel adequately trained to counsel adolescents on sexual health or contraception²⁶ or may not feel empowered to do so by their supervising attending

TABLE 3 Proportion of Patients Endorsing Sexual Activity Among Those With Sexual History Documentation

Characteristic	Sexually Active, %	Not Sexually Active, %	P^a
All patients ($n = 469$)	50.5	49.5	
Boys ($n = 110$)	46.4	53.6	.32
Girls ($n = 359$)	51.8	48.2	
Younger ($n = 199$)	36.7	63.3	<.001
Older ($n = 270$)	60.7	39.3	
Medical admission ($n = 307$)	48.2	51.8	.17
Psychiatric admission ($n = 162$)	54.9	45.1	

^a P is χ^2 tested between the proportions within the 2 groups.

physicians. Thus, providers may avoid delving into the topic even if an opportunity arises. In the setting of acute illness, it may be more difficult to establish an expectation that the parent leaves the room for a portion of the evaluation. Surprisingly, the time of day did not impact sexual history documentation. Regardless, ensuring adolescent confidentiality in children's hospitals is challenging, and this is likely to affect both sexual history taking and documentation.²⁷

Previous studies have found that adolescents desire teenager-specific care in the inpatient setting.^{28,29} Dedicated adolescent units improve feelings of security and comfort in patients³⁰ and provide the most developmentally appropriate care.³¹ More recently, it has been shown that sexual health counseling is desired by a substantial number of adolescents during hospital visits.^{10,32,33} We argue that optimal adolescent care includes thorough sexual health screening in hospitalized patients as a first step toward providing appropriate sexual health counseling and services. If done inappropriately, however, sexual history taking could harm rather than help a positive rapport development and patient disclosures. The implementation of electronic risk screening, which is preferable in adolescents for sensitive topics, may be beneficial and address issues of confidentiality.^{34,35} Sexual health care beyond sexual activity screening should occur. Using the hospital stay as an opportunity to adhere to recommended STI screening is feasible; in fact, some institutions have implemented opt-out, universal HIV screening for every adolescent and adult patient in the ED or hospital wards.^{36,37} Providers caring for adolescents, regardless of specialty, ought to feel equipped to provide contraception counseling and information on community resources, although follow-up with primary care providers would be of the utmost importance. Ideally, a patient's desired contraception, particularly long-acting and reversible contraception, would be offered during the hospitalization, and thus avoid cost and accessibility obstacles that many adolescents face.^{38,39}

Our study had several limitations. It is possible that chart records do not accurately reflect the content of each visit and that providers did ask about sexual history but failed to document this. Because details such as contraception and condom use were not explicitly included in the standard template, our measurement of these items should be interpreted with caution. Additionally, sexual history documentation might be omitted in cases in which sexual history was discussed and the patient denied any sexual engagement or a negative sexual history was already documented in ED notes. Nonetheless, documentation of the discussion is worth noting for both handoffs within the encounter and for longitudinal care. Relatedly, providers may be reluctant to note sensitive sexual history content in a minor's chart in an effort to prioritize patient privacy over a complete record of the encounter because most EHRs lack the capability to protect this information if medical records are requested by the parents of minors.⁴⁰ In addition, from our chart review, we are unable to ascertain whether a parent and/or guardian was present for the entire history or asked to leave to allow the provider to speak confidentially to the patient, potentially discouraging both provider and patient from speaking frankly about sexual activity. Finally, we acknowledge that this study was conducted at an academic center within the pediatric hospitalist setting that had many mental health-related admissions, which may not be generalizable to all pediatric inpatient settings.

CONCLUSIONS

Our data demonstrate that adolescents who are admitted to our pediatric hospitalist service receive inconsistent screening for sexual health. Girls and older teenagers were more likely to have sexual history documented in their charts, but sexual history taking should be standard protocol for all patients regardless of gender or age. This screening is especially vital for adolescent inpatients who exhibit risky behaviors and lack primary care providers. Increased education on the importance of sexual history taking for all hospitalized

adolescents should be implemented as well as the use of standardization techniques (eg, EHR prompts and flags) to ensure that documentation takes place. At the same time, continued efforts to ensure adolescent confidentiality must occur within the inpatient setting. Future researchers in this area should examine whether universal sexual history taking leads to sexual health management in the inpatient setting and, ultimately, reduced sexual health risk among this adolescent patient population.

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