Readmissions after Pediatric Hospitalization for Suicide Ideation and Suicide Attempt

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Abstract

Objective: To inform resource allocation towards a continuum of care for youth at risk of suicide, we examined unplanned 30-day readmissions after pediatric hospitalization for either suicide ideation (SI) or suicide attempt (SA).

Methods: We conducted a retrospective cohort study of a nationally representative sample of 133,516 hospitalizations for SI or SA among 6- to 17-year-olds to determine prevalence, risk factors, and characteristics of 30-day readmissions using the 2013 and 2014 Nationwide Readmissions Dataset (NRD). Risk factors for readmission were modeled using logistic regression.

Results: We identified 95,354 hospitalizations for SI and 38,162 hospitalizations for SA. Readmission rates within 30 days were 8.5% for SI and SA hospitalizations. Among 30-day readmissions, more than one-third (34.1%) occurred within 7 days. Among patients with any 30-day readmission, 11% had more than 1 readmission within 30 days. The strongest risk factors for readmission were SI or SA hospitalization in the 30 days preceding the index SI/SA

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hospitalization (Adjusted Odds Ratio [AOR]: 3.14, 95% Confidence Interval [CI] 2.73–3.61) and hospitalization for other indications in the previous 30 days (AOR: 3.18, 95%CI: 2.67–3.78). Among readmissions, 94.5% were for a psychiatric condition and 63.4% had a diagnosis of SI or SA.

Conclusions: Quality improvement interventions to reduce unplanned 30-day readmissions among children hospitalized for SI or SA should focus on children with a recent prior hospitalization and should be targeted to the first week following hospital discharge.

Keywords

epidemiology; depression; pediatric hospital medicine; readmissions; mental health

Background

Suicide is a leading cause of death for 10- to 34-year-olds in the United States.[1,2] During the past 2 decades, the youth suicide death rate has risen by 24%, and more than 5,000 young people die from suicide each year.[3] Suicide ideation (SI) and suicide attempts (SA) are well-established risk factors for suicide death and a source of morbidity for patients and families. One-third of youth with SI attempt suicide at some point in their lifetime.[4] Approximately 11% of youth SAs result in suicide death, and 2% of youth who attempt suicide subsequently go on to die from suicide after recovering from a prior suicide attempt.[5] More than 60,000 youth are hospitalized for SI or SA each year,[6] and young people hospitalized for SA are at high short-term risk of repeat SA and suicide death.[7] Hospitals need strategies for measuring the quality of SI and SA hospitalizations, monitoring post-discharge outcomes, and identifying the patients at highest risk of poor outcomes. Readmissions are a useful hospital quality measure that can indicate re-emergence of SI, repeat SA, or inadequate community-based mental health treatment, and interventions designed for patients with readmissions can potentially avert morbidity or mortality.

The National Committee on Quality Assurance recommends measurement of quality metrics for 30-day mental health follow-up after psychiatric hospitalizations, 30-day readmissions after adult (but not pediatric) psychiatric hospitalizations, and 30-day readmissions in pediatric medical and surgical hospitalizations. Readmissions measures are not consistently used to evaluate pediatric psychiatric hospitalizations, and psychiatric quality measures are not used to evaluate medical or surgical hospitalizations for SA. Recent research has investigated transfers to post-acute care,[8] readmission prevalence, variation in hospital readmission performance, and risk factors for readmissions after pediatric psychiatric hospitalizations.[9–11] However, no national study has investigated 30-day readmissions in youth hospitalized specifically for SI or SA.

In order to inform hospital quality measurement and improve hospital and post-discharge care for youth at risk of suicide, more information is needed about characteristics of and risk factors for readmissions after index SI/SA hospitalization. To address this knowledge gap, among SI/SA hospitalizations in 6- to 17-year-olds, we examine: (1) unplanned 30-day readmissions and characteristics of hospitalizations by 30-day readmission status; (2)

patient, hospital, and regional characteristics associated with 30-day readmissions; and (3) characteristics of 30-day readmissions.

Methods

Study Design and Data Source

We conducted a national, retrospective cohort study of hospitalizations for patients 6 to 17 years old using the Agency for Healthcare Research and Quality (AHRQ) 2013 and 2014 Nationwide Readmissions Database (NRD). The combined 2013–14 NRD includes administrative data from a nationally-representative sample of 29 million hospitalizations in 22 states, accounting for 49.3% of all US hospitalizations and is weighted for national projections. The NRD includes hospital information, patient demographic information, and International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis, procedure, and external cause of injury codes (E-codes). The database includes one primary diagnosis, up to 24 additional diagnoses, and up to 4 E-codes for each hospitalization. The NRD includes information about hospitalizations in acute care general hospitals (including their psychiatric units) but not from specialty psychiatric hospitals. The database includes de-identified, verified patient linkage numbers so that patients can be tracked across multiple hospitalizations at the same institution or different institutions within the same state. This study was considered exempt from review by the Children's Hospital of Philadelphia Institutional Review Board.

Sample

We identified a sample of 181,575 hospitalizations for SI (n=119,037) or SA (n=62,538) among 6- to 17-year-olds between January 1, 2013 and December 31, 2014 (Figure 1). We included children as young as age 6 because validated methods exist to identify SI and SA in this age group,[12] and because suicide deaths have recently increased among younger children.[3] We excluded patients 18 years and older from this study since delivery of mental health services differs for adults.[13] To create the sample, we first identified all hospitalizations of patients 6 to 17 years old. We then used a validated algorithm relying on ICD-9-CM diagnosis codes for poisonings and E-codes for self-injury (E950–959) to identify hospitalizations related to SA.[12] Because E-code completeness varies among states,[14] we also used the combination of having both a diagnosis code for injury (800–999) and an ICD-9-CM code for SI (V62.84) as a proxy for SA. Among hospitalizations without SA, we identified hospitalizations with SI using the ICD-9-CM code for SI (V62.84) in any position.

We identified 133,516 index hospitalizations with complete data at risk for an unplanned readmission. Because NRD data cannot be linked between calendar years, we limited the study time period for each calendar year to 10 months. We excluded hospitalizations in January because the full 30-day timeframe to determine whether a hospitalization had occurred in the preceding 30 days, a known risk factor for readmissions in other samples,[15] was not available. We excluded index hospitalizations occurring in December, because the full 30-day timeframe to ascertain readmissions was not available. We excluded hospitalizations resulting in death, since these are not at risk for readmission, and hospitalizations resulting in transfer since timing of discharge to the community was not

known. Readmission hospitalizations were eligible to be included as index hospitalizations if they met sample inclusion criteria. The final sample for readmissions analyses included 95,354 SI hospitalizations and 38,162 SA hospitalizations (Figure 1).

Main Outcome

The primary outcome was any unplanned, all-cause readmission within 30 days of index hospitalization for SI or SA. Among 30-day readmissions, we examined readmission timing, whether the readmission was to the same hospital or a different hospital, length of stay, and indication for readmission (medical/surgical or psychiatric, and presence of SI or SA diagnoses). Planned readmissions were identified using measure specifications endorsed by AHRQ and the National Quality Forum[16] and excluded from measurement.

Among index hospitalizations for SI, we specifically examined 30-day readmissions for subsequent SA, since one objective of hospitalization for SI is to prevent progression to SA or death. We could not identify hospitalizations for repeat SA after index hospitalization for SA, because diagnosis codes did not differentiate between readmission for complications of index SA and readmission for repeat SA.

Independent variables

We analyzed demographic, clinical, and hospital factors associated with readmissions in other samples.[17–20] Demographic characteristics included patient gender, age, urban or rural residence, payer, and median national income quartile for a patient's ZIP code. Race and ethnicity data are not available in NRD.

Clinical characteristics included hospitalization in the 30-days preceding the index hospitalization, index hospitalization length of stay, and admission via the emergency department (ED) versus direct admission. A patient's chronic condition profile was determined using index hospitalization diagnosis codes. Complex chronic conditions (e.g., cancer, cystic fibrosis) were identified using a classification system used in many prior studies of hospital administrative datasets,[21] and other non-complex chronic medical conditions (e.g., asthma, obesity) were identified using the HCUP chronic condition indicator system.[22] Psychiatric conditions (e.g., anxiety disorders, substance abuse, autism) were identified and categorized using a classification system used in studies of hospital administrative datasets.[23] Number of psychiatric conditions was determined by counting the number of psychiatric condition categories in which a patient had a diagnosis. SA was categorized as having lower risk of death (e.g., medication overdose, injury from cutting or piecing), or higher risk of death (e.g., hanging, suffocation, or firearm injury).[24]

Because of known temporal trends in SI and SA,[25,26] month and year of admission were included as covariates. Hospital characteristics included teaching hospital and children's hospital designations.

Statistical Analysis

We compared descriptive, summary statistics for characteristics of index hospitalizations with and without a 30-day readmission using Rao-Scott chi-square tests. In multivariable

analyses, we derived logistic regression models to measure associations of patient, hospital, and temporal factors with 30-day hospital readmissions. Analyses were conducted in SAS PROC SURVEYLOGISTIC and were weighted to achieve national estimates, clustered by sample stratum and hospital to account for the complex survey design,[27] clustered by patients to account for multiple index visits per patient, and adjusted for clinical, demographic, and hospital characteristics. SAS version 9.4 (SAS Institute, Cary, NC) was used for all analyses. All tests were two-sided, and a p-value <0.05 was considered statistically significant.

Results

Sample Characteristics

In weighted analyses, we identified 133,516 hospitalizations in acute-care hospitals for SI or SA, and 8.5% (n=11,375) of hospitalizations had at least one unplanned 30-day readmission to an acute care hospital. Unweighted, the sample included 37,683 patients and 42,198 hospitalizations. Among all patients represented in the sample, 90.5% had only a single SI or SA hospitalization, 7.7% had 2 hospitalizations, and 1.8% had >2 hospitalizations in 1 year.

Table 1 summarizes sample characteristics and displays the demographic, clinical, and hospital characteristics of index hospitalizations by 30-day readmission status. Patients represented in the index hospitalizations were 64.9% female, 3.6% ages 6 to 9 years, 40.1% ages 10 to 14 years, and 56.3% ages 15 to 17 years old. Nearly half of patients (49.1%) used public insurance. Nearly half (44.9%) lived in metropolitan areas with >1 million residents; 36.1% lived in metropolitan areas with 50,000 to 1 million residents; and 14.7% lived in rural areas.

Median length of stay for the index hospitalization was 5 days (interquartile range [IQR] 3–7). Nearly one third (32.3%) of patients had a non-complex chronic medical condition; 7.8% had a complex chronic medical condition; and 98.1% had a psychiatric condition. The most common psychiatric conditions were depressive disorders (60.0%) and anxiety disorders (42.2%). More than half (55.0%) of patients had >2 psychiatric conditions. Most hospitalizations in the sample had SI only (71.4%). Among patients with SA, 81.0% had a lower-lethality mechanism of injury and 19.0% had a higher-lethality mechanism.

Patients experiencing a readmission were more likely to be 10 to 14 years old and use public insurance than patients without a readmission (p<0.001 for both). For clinical characteristics, patients with a readmission were more likely to have longer index hospital stays (6 vs. 5 days), >2 psychiatric conditions, SI (vs. SA), a prior admission in the 30 days preceding the index hospitalization, and admission via the ED (vs. direct admission) (p<0.001 for all).

Association of Patient and Hospital Characteristics with Readmissions

Table 2 displays patient and hospital characteristics associated with readmissions. Among demographic characteristics, 10- to 14-year old patients had higher odds of readmission (OR 1.18, 95% confidence interval [CI]: 1.07–1.29) than 15- to 17-year-old patients. Having public insurance was associated with higher odds of readmission (OR 1.14, 95% CI: 1.04–

1.25). We found no differences in readmission rates based on sex, urban or rural location, or patient's ZIP code income quartile.

Among clinical characteristics, hospitalizations with an admission for SI or SA in the preceding 30 days, meaning that the index hospitalization itself was a readmission, had the strongest association with readmissions (OR 3.14, 95% CI: 2.73–3.61). In addition, patients admitted via the ED for the index hospitalization had higher odds of readmission (OR 1.25, 95% CI: 1.15–1.36). Chronic psychiatric conditions associated with higher odds of readmission included psychotic disorders (OR 1.39, 95% CI: 1.16–1.67) and bipolar disorder (OR 1.27, 95% CI: 1.13–1.44).

Characteristics of 30-day Readmissions

Table 3 displays characteristics of readmissions after SI compared to SA. Among the combined sample of 11,375 30-day readmissions, 34.1% occurred within 7 days, and 65.9% in 8–30 days. 11% of patients with any readmission had more than 1 readmission within 30 days. Among readmissions, 94.5% were for a psychiatric problem, and 5.5% for a medical or surgical problem. 43.9% had a diagnosis of SI and 19.5% a diagnosis of SA. Readmissions were more likely to occur at a different hospital after SI than after SA (48.1% vs. 31.3%, p<0.001). Medical and surgical indications for readmission were less common after SI than after SA (4.4% vs. 8.7%, p<0.001). Only 1.2% of SI hospitalizations had a readmission for SA within 30 days. Of these cases, 55.6% were ages 15 to 17; 43.3% ages 10 to 14; and 1.1% ages 6 to 9; 73.1% of patients were female; and 49.1% used public insurance.

Discussion

SI and SA in children and adolescents are substantial public health problems associated with significant hospital resource utilization. In 2013 and 2014, there were 181,575 pediatric acute-care hospitalizations for SI or SA, accounting for 9.5% of all hospitalizations in 6- to 17-year-old patients nationally. Among acute-care SI and SA hospitalizations, 8.5% had a readmission to an acute-care hospital within 30 days. The study data source did not include psychiatric specialty hospitals, and the number of index hospitalizations is likely substantially higher when psychiatric specialty hospitalizations are included. Readmissions may also be higher if patients were readmitted to psychiatric specialty hospitals after discharge from acute-care hospitals. The strongest risk factor for unplanned 30-day readmissions was previous hospitalization in the 30 days before the index admission, likely a marker for severity or complexity of psychiatric illness. Other characteristics associated with higher odds of readmission were bipolar disorder, psychotic disorders, and age 10 to 14 years. More than one third of readmissions occurred within the first 7 days after hospital discharge. Prevalence of SI and SA hospitalizations and readmissions was similar to findings in previous analyses of mental health hospitalizations.[10,28]

A patient's psychiatric illness type and severity, as evidenced by the need for frequent repeat hospitalizations, was highly associated with risk of 30-day readmission. Any hospitalization in the 30 days preceding the index hospitalization, whether for SI/SA or another problem, was a strong risk factor for readmissions. We suspect that prior SI/SA hospitalizations reflect

a patient's chronic elevated risk for suicide. Prior hospitalizations not for SI or SA could be hospitalizations for mental illness exacerbations that increase risk of SI or SA, e.g., bipolar disorder with acute mania, or they could represent physical health problems. Chronic physical health problems are a known risk factor for SI and SA.[29]

Knowledge of which characteristics increase readmission risk can inform future resource allocation, research, and policy in several ways. First, longer hospital stays could mitigate readmission risk in some patients with severe psychiatric illness. European studies in older adolescents and adults show that for severe psychiatric illness, longer hospital stay is associated with lower risk of hospital readmission.[15,30] Second, better access to intensive community-based MH services, including evidence-based psychotherapy and medication management, improve symptoms in young people.[31] Access to these services likely affects risk of hospital readmission. We found that readmission risk was highest in 10- to 14-year olds. Taken in the context of existing evidence that suicide rates are rising in younger patients,[1,3] our findings suggest that particular attention to community services for younger patients is needed. Third, care coordination could help patients access beneficial services to reduce readmissions and improve other outcomes. Enhanced discharge care coordination reduced suicide deaths in high-risk populations in Europe[32] and Japan,[33] and improved attendance at mental health follow up after pediatric ED discharge in a small US sample.[34] Given that one-third of readmissions occurred within 7 days, care coordination designed to ensure access to ambulatory services in the immediate post-discharge period may be particularly beneficial.

We found that ZIP code income quartile was not associated with readmissions. We suspect that poverty is not as closely correlated with MH hospitalization outcomes as it is with physical health hospitalization outcomes for several reasons. Medicaid insurance historically has more robust coverage of mental health services than some private insurance plans, which might offset some of the risk of poor mental health outcomes associated with poverty. Low-income families are eligible to use social services, and families accessing social services might have more opportunities to become familiar with community mental health programs. Further, the expectation of high achievement found in some higher income families is associated with MH problems in children and adolescents.[35] Therefore, being in a higher income quartile might not be as protective against poor mental health outcomes as it is against poor physical health outcomes.

While NRD provides a rich source of readmissions data across hospitals nationally, several limitations are inherent to this administrative dataset. First, data from specialty psychiatric hospitals was not included in NRD. The study underestimates the total number of index hospitalizations and readmissions, since index SI/SA hospitalizations at psychiatric hospitals are not included, and readmissions are not included if they occurred at specialty psychiatric hospitals. Second, because data cannot be linked between calendar years, we excluded January and December hospitalizations, and findings might not generalize to hospitalizations in January and December. Seasonal trends in SI/SA hospitalizations are known to occur.[36] Third, race, ethnicity, primary language, gender identity, and sexual orientation are not available in NRD, and we could not examine the association of these characteristics with readmission likelihood. Fourth, we did not have information about pre- or post-

hospitalization insurance enrollment or outpatient services that could affect risk of readmission. Nevertheless, this study offers information on characteristics of readmissions after hospitalizations for SI and SA in a large nationally-representative sample of youth, and findings can inform resource planning to prevent suicides.

Conclusion

Hospital readmissions are common in patients with SI and SA, and patients with a recent previous hospitalization have the highest risk of readmission. More than one-third of readmissions after SI or SA occurred within the first 7 days. Due to the dearth of mental health services in the community, hospitals offer an important safety net for youth experiencing acute suicidal crises. Strategies to improve the continuum of care for patients at risk of suicide that solely focus on reducing readmissions are not likely to benefit patients. However, readmissions can identify opportunities for improving hospital discharge processes and outpatient services. Future research and clinical innovation to investigate and improve hospital discharge planning and access to community mental health services is likely to benefit patients and could reduce 30-day hospital readmissions.

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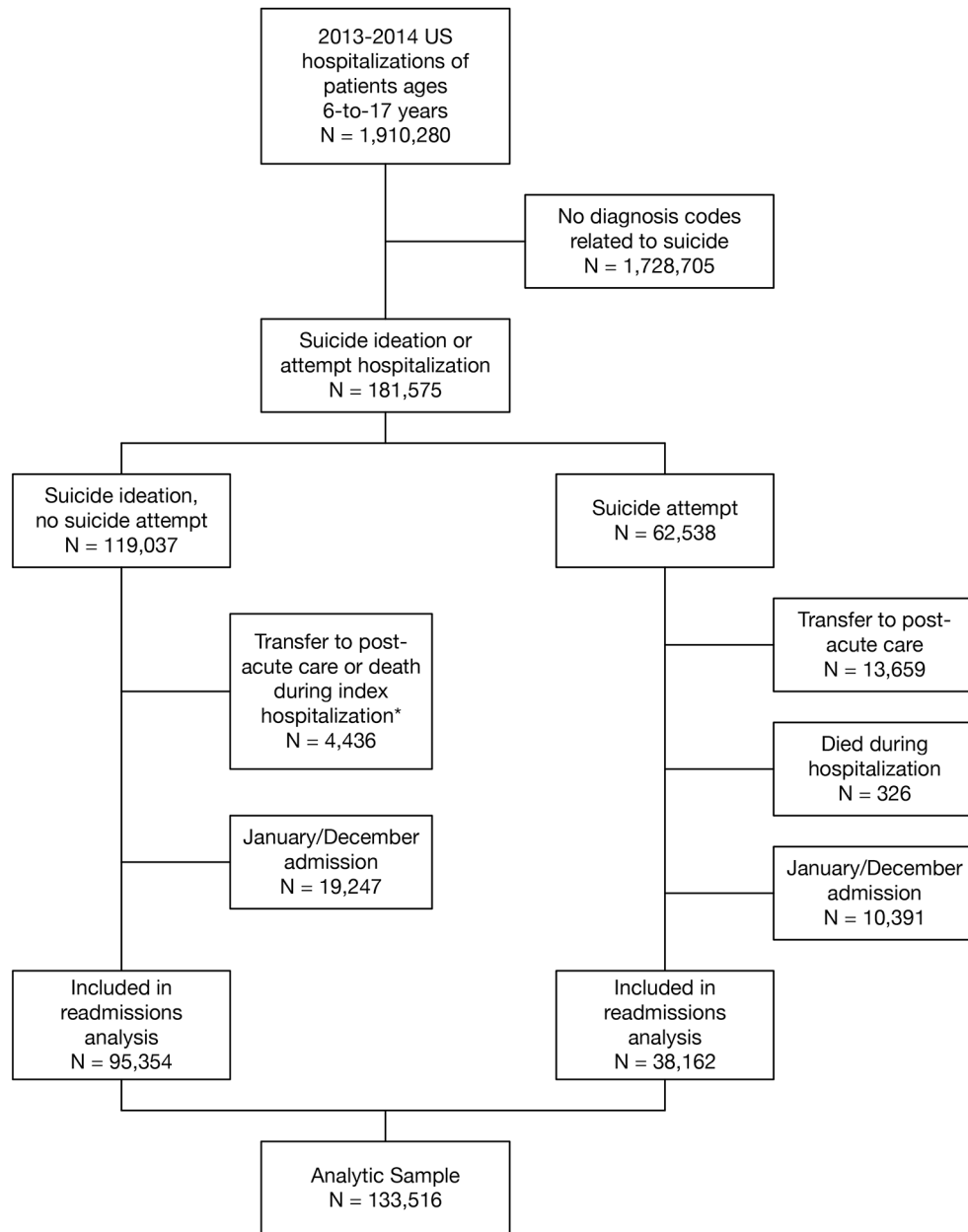
Figure 1.
Hospitalizations for Suicide Ideation or Attempt in 2013–2014 among United States Youth

Table 1.

Characteristics of US Youth Index Hospitalizations for Suicide Ideation or Attempt in 2013–2014, by 30-day Readmission Status

Characteristic	Total N	Without 30-day readmit (%)	With 30-day readmit (%)	p-value
	133,516	N=122,141	N=11,375	
Patient Demographic characteristics[a]				
Sex				
Male	46,884	35.2	34.4	.49
Female	86,632	64.8	65.6	
Age Group				
6–9 yo	4786	3.6	3.7	<.001
10–14 yo	53,532	39.6	45.1	
15–17 yo	75,198	56.8	51.3	
Payer				<.001
Public Insurance	65,524	48.7	53.9	
Private Insurance	56,860	43.1	38.3	
Other Insurance (charity, self-pay)	11,132	8.2	7.8	
Patient Location				.04
Metropolitan area population >1million	65,421	48.8	52.8	
Metropolitan area population 50,000–1million	48,203	36.3	34.6	
Rural	19,633	14.9	12.6	
US ZIP Code Income Quartile[b]				.67
Lowest ($1-$37,999)	33,814	25.5	26.7	
2nd ($38,000–47,999)	37,025	28.1	27.0	
3rd ($48,000-$63,999)	34,968	26.4	26.7	
Highest ($64,000+)	26,298	19.9	19.6	
Patient Clinical Characteristics				
LOS (Median [IQR])	5 (3,7)	5 (3,7)	6 (4,8)	<.001
Medical Condition Profile				.009
Any non-complex chronic condition	43,162	32.1	34.8	
Any complex chronic medical condition	10,400	7.7	8.8	
No chronic medical condition	79,954	60.2	56.5	
Any chronic psychiatric condition	130,979	98.1	98.7	.006
Anxiety Disorder	56,384	41.9	46.0	.004
ADHD	33,667	24.9	28.2	<.001
Autism	5323	3.9	4.6	.12
Bipolar Disorder	42,352	31.0	39.0	<.001
Depressive Disorder	80,111	60.3	56.4	.001
Externalizing Behavior Disorders	29,120	21.4	25.9	<.001
Psychotic Disorder	5487	3.9	6.2	<.001
Substance Abuse	31,367	23.8	20.2	<.001

Characteristic	Total N	Without 30-day readmit (%)	With 30-day readmit (%)	p-value
Other psychiatric condition	41,249	30.8	32.2	.27
Number of chronic psychiatric conditions				<.001
1 psychiatric condition	20,704	15.8	12.1	
2 psychiatric conditions	37,848	28.6	25.8	
>2 psychiatric conditions	73,419	54.4	61.4	
Type of suicide risk				<.001
Suicide ideation only	95,355	71.1	75.0	
Suicide attempt: Cutting or poisoning	30,910	23.5	19.0	
Suicide attempt: Higher-lethality mechanism	7251	5.4	6.0	
SI/SA admission in past 30 days	7180	4.6	13.8	<.001
Non-SI/SA admission in past 30 days	3406	2.2	6.7	<.001
ED presentation	65,953	48.9	54.4	.001
Hospital Characteristics				
Location				
Urban teaching hospital	33,523	24.8	28.8	
Urban non-teaching hospital	94,645	71.2	67.7	.037
Rural hospital	5348	4.0	3.5	
Free-standing Children's Hospital	9848	7.4	7.4	.994

[a.] Where numbers do not sum to total, remainder of hospitalizations had missing data.

[b.] 2014 Quartiles are: Lowest $1-$39,999, Second $40,000-$50,999, Third $51,000-$65,999, Highest: >$66,000; Abbreviations: ADHD – attention deficit hyperactivity disorder, ED – Emergency Department, LOS – Length of Stay, IQR – interquartile range, NA – not applicable

Table 2.

Odds of Unplanned, All-cause 30-day Readmissions after Pediatric Hospitalization for Suicide Ideation or Attempt in 2013–2014

	Adjusted Odds Ratio (95% Confidence Interval)
Patient Demographic characteristics	**N=133,516**
Sex	
Female	Ref
Male	0.94 (0.86–1.03)
Age Group	
6–9 yo	0.97 (.75–1.24)
10–14 yo	1.18 (1.07–1.29)
15–17 yo	Ref
Payer	
Private Insurance	Ref
Public Insurance	1.14 (1.04–1.25)
Other Insurance (charity, self-pay)	1.01 (.85–1.19)
Patient Location	
Metropolitan area population >1million	1.23 (1.04–1.46)
Metropolitan area population 50,000–1million	1.15 (1–1.31)
Rural	Ref
US ZIP Code Income Quartile[a]	
Lowest ($1-$37,999)	1.04 (.91–1.19)
2nd ($38,000–47,999)	1 (.88–1.14)
3rd ($48,000-$63,999)	1.02 (.90–1.17)
Highest ($64,000+)	Ref
Patient Clinical Characteristics	
Index Length of Stay (days)	
1–3 days	Ref
4–5 days	1.25 (1.1–1.41)
6–7 days	1.4 (1.23–1.58)
>7 days	1.65 (1.46–1.87)
Medical Condition Profile	
Any non-complex chronic condition	1.07 (.98–1.18)
Any complex chronic medical condition	1.13 (.98–1.31)
No chronic medical condition	Ref
Type of chronic psychiatric condition	
Anxiety Disorder	1.12 (.99–1.25)
ADHD	1.04 (.92–1.17)
Autism	1 (.81–1.23)
Bipolar Disorder	1.27 (1.13–1.44)
Depressive Disorder	1.06 (.94–1.2)
Externalizing Behavior Disorder	1.14 (1.02–1.28)

	Adjusted Odds Ratio (95% Confidence Interval)
Patient Demographic characteristics	**N=133,516**
Psychotic Disorder	1.39 (1.16–1.67)
Substance Abuse	.83 (.73–.95)
Other psychiatric condition	1.01 (.9–1.12)
No psychiatric condition	Ref
Number of chronic psychiatric conditions	
0	.98 (.64–1.52)
1	Ref
2	1.14 (.99–1.32)
>2	1.12 (.9–1.36)
Prior admission in past 30 days	
No prior admission	Ref
Non-SI/SA admission	3.18 (2.67–3.78)
SI/SA admission	3.14 (2.73–3.61)
ED presentation	1.25 (1.15–1.36)
Hospital Characteristics	
Hospital Location	
Urban non-teaching hospital	Ref
Urban teaching hospital	1.22 (1.11–1.34)
Rural hospital	1.26 (1.02–1.55)
Free-standing Children's Hospital	.98 (.83–1.17)

[a.] 2014 Quartiles are: Lowest $1-$39,999, Second $40,000-$50,999, Third $51,000-$65,999, Highest: >$66,000; Models account for NRD survey weights and clustering of admissions within patients, and they adjust for all listed covariates, month of admission, and year of admission.

Abbreviations: ADHD – attention deficit hyperactivity disorder, ED – Emergency Department, Ref – reference group, SA – suicide attempt, SI – suicide ideation, yo – years old

Table 3.

Characteristics of 30-day Readmissions after Pediatric Hospitalization for Suicide Ideation or Attempt in 2013–2014

	Unplanned 30-day readmissions			
	Combined sample (SI or SA) N=11,375	Index admission for SI only (%) N=8,531	Index admission for SA (%) N=2,844	p-value for SI vs. SA
>1 readmission within 30 days of index hospitalization	10.9	10.8	11.7	.44
Characteristics of First Readmission				
Readmission Timing				
First readmission in 0–7 days	34.1	33.5	36.0	0.17
First readmission in 8–30 days	65.9	66.5	64.0	
Hospital Characteristics				
Same Hospital	84.7	86.2	80.3	<.001
Different Hospital	15.3	13.8	19.7	<.001
Clinical Characteristics				
Primary Psychiatric indication	94.5	95.6	91.3	<.001
Medical/Surgical indication	5.5	4.4	8.7	<.001
Suicide ideation, but no attempt	43.9	48.1	31.3	<.001
Suicide attempt	19.5	15.9	30.5	<.001
Length of Hospitalization [Median (IQR)]	6 (4–8)	6 (4–8)	5 (3–8)	.02

Abbreviations: IQR – interquartile range; SA- suicide attempt; SI – suicide ideation