Hospital-based Medicine: HSR

Tuesday, August 11 4:30-6:00 pm EDT

Moderators
Jeremy Friedman
Lauren Solan

EDT	Abstract	Title	Presenting Author
4:30 pm		Introduction & General Information	
4:35 pm	3382732	Measuring variation in care for common hospital conditions	Ilana Waynik
4:45 pm	3344830	Prevalence and Variation of Clinically Significant Drug-Drug Interactions Across U.S. Children's Hospitals	James Antoon
4:55 pm	3373416	Variation in care of infants with congenital heart disease hospitalized with bronchiolitis	Namrata Ahuja
5:05 pm	3368525	Transition from Intravenous to Oral Antibiotics in Hospitalized Children: Opportunities for Antibiotic Stewardship	Jillian Cotter
5:15 pm	3373736	Opioid Use to Treat Migraine Headaches in Hospitalized Children and Adolescents	Abbey Masonbrink
5:25 pm	3375503	Acute care hospitalizations for acetaminophen poisoning among children and adolescents in the US, 2016.	Kristin Shadman
5:35 pm	3382523	Providing doctors' notes to parents during hospitalization: A qualitative study	Michelle Kelly
5:45 pm		Wrap Up	

Note: Schedule subject to change based on presenter availability.

CONTROL ID: 3382732

TITLE: Measuring variation in care for common hospital conditions

PRESENTER: Ilana Waynik

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CURRENT CATEGORY: Hospital-based Medicine

CURRENT SUBCATEGORY: None

KEYWORDS: Variation, Standard care.

SESSION TITLE: Hospital-based Medicine: HSR |Hospital-based Medicine: HSR

SESSION TYPE: Webinar|Platform

ABSTRACT BODY:

Background: Studies have demonstrated variation in care for common conditions across institutions.[1,2] However, there are few established methods for directly comparing that variation.

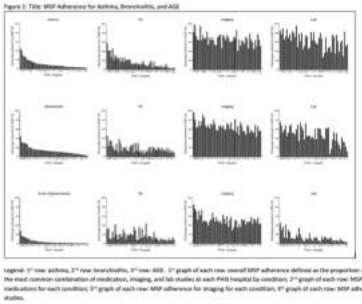
Objective: 1) develop an empiric measure of variation in care 2) describe variability in the care of asthma, bronchiolitis, and acute gastroenteritis (AGE) across a national sample of tertiary children's hospitals 3) determine if standard care practices were associated with length of stay (LOS), hospital costs, or 30-day readmission

Design/Methods: We performed a retrospective cohort analysis of inpatient and observation discharges of children ages 0-22 years included in the Pediatric Health Information System (PHIS) database between 2016-2018, categorized into All-Patient Refined Diagnostic Groups (APR DRGs; 3M, Salt Lake City, UT) for asthma, bronchiolitis, or AGE. We excluded discharges with severity of illness (SOI) level 3 or 4; ICU admission; mortalities; indication of a complex chronic condition the year prior to admission; or LOS that exceeded the APR DRG's 90th percentile. Primary exposure was adherence to minimum standard practice (MSP), a novel measure of variation in care. To determine the MSP we first identified for each condition any medications, imaging studies, and laboratory tests that were billed in $\geq$ 25% of discharges at each hospital. Second, we identified the most common combination of practices for medications, imaging, and laboratory studies and defined it as the MSP for that hospital. We quantified the proportion of discharged patients who received this hospital-specific MSP for each site and defined it as MSP adherence. We then used regression models adjusted for age, sex, race, payer, and SOI to determine associations between MSP adherence and the outcomes of LOS, cost, and readmission.

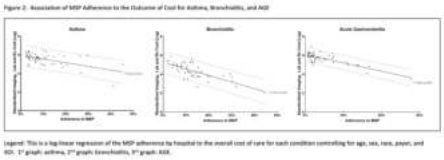
Results: 179,580 discharges (asthma = 70,023; bronchiolitis = 73,517; AGE = 36,040) from 51 PHIS hospitals were included. There was significant variation in MSP adherence across hospitals in all 3 conditions: 2%-45% for asthma ($p<0.001$); 2%-44% for bronchiolitis ($p<0.001$), and 1%-28% for AGE ($p<0.001$). Overall, most MSP variation was explained by medication variation (Figure 1). Hospitals with greater MSP adherence had lower costs (Figure 2; $p<0.001$ for all 3 conditions). There was no association between MSP adherence and LOS or 30-day readmission.

Conclusion(s): Hospitals that more consistently adhere to their own MSPs for asthma, bronchiolitis, and AGE have

lower levels of medication, lab, and imaging utilization and lower hospital costs.



Legend: 1st row: asthma, 2nd row: bronchiolitis, 3rd row: AGE. 1st graph of each row: overall MSP adherence defined as the proportion of children discharged with the most common combination of medication, imaging, and lab studies at each PHIS hospital by condition; 2nd graph of each row: MSP adherence specific to medications for each condition; 3rd graph of each row: MSP adherence for imaging for each condition; 4th graph of each row: MSP adherence for laboratory studies.



Legend: This is a log-linear regression of the MSP adherence by hospital to the overall cost of care for each condition controlling for age, sex, race, payer, and SOI. 1st graph: asthma, 2nd graph: bronchiolitis, 3rd graph: AGE.

IMAGE CAPTION:

Legend: 1st row: asthma, 2nd row: bronchiolitis, 3rd row: AGE. 1st graph of each row: overall MSP adherence defined as the proportion of children discharged with the most common combination of medication, imaging, and lab studies at each PHIS hospital by condition; 2nd graph of each row: MSP adherence specific to medications for each condition; 3rd graph of each row: MSP adherence for imaging for each condition; 4th graph of each row: MSP adherence for laboratory studies.

Legend: This is a log-linear regression of the MSP adherence by hospital to the overall cost of care for each condition controlling for age, sex, race, payer, and SOI. 1st graph: asthma, 2nd graph: bronchiolitis, 3rd graph: AGE.

CONTROL ID: 3344830

TITLE: Prevalence and Variation of Clinically Significant Drug-Drug Interactions Across U.S. Children's Hospitals

PRESENTER: James W Antoon

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CURRENT CATEGORY: Hospital-based Medicine

CURRENT SUBCATEGORY: None

KEYWORDS: Drug-Drug Interactions, Mediation Safety, Adverse Drug Events.

SESSION TITLE: Hospital-based Medicine: HSR |Hospital-based Medicine: HSR

SESSION TYPE: Webinar|Platform

ABSTRACT BODY:

Background: Hospitalized children are frequently exposed to medications with potential drug-drug interactions (DDIs). Yet, little is known about the prescribing patterns of clinically significant DDIs in this population

Objective: To determine the prevalence and variation of DDI exposures at high risk for clinically significant effects across children's hospitals

Design/Methods: Using data from the Pediatric Health Information System, we performed a retrospective study of patients <26 years of age who were discharged from one of 52 U.S. children's hospitals between October 2016 and September 2018. We excluded encounters for normal newborns, NICU, and peri- obstetrical care. DDIs with high risk for clinically significant effects were identified using a published expert consensus definition that includes 53 medication pairings with significant safety implications in pediatric populations. Patients were considered exposed to a DDI pair if there was ≥1 hospital day where both medications were administered on the same hospital day. DDIs were further classified by risk grades (A, B, C, D, and X, Table 1). The risk grades provide a recommended action based on the relevance of the interaction, the level of evidence, and the iatrogenic risk. The primary outcome was DDI exposure rate (per 1000 patient days). We calculated adjusted hospital-level rates of DDI exposure using a generalized linear mixed-effect model and examined DDI exposure variation across hospitals. We also identified patient-level risk factors associated with DDI using multivariable logistic regression.

Results: Across 52 children's hospitals, 47,414 (2.0%) hospitalizations had exposure to a high risk DDI pairing (34.9 per 1000 patient days, Table 1). One quarter of pairings were considered contraindicated (risk grade X, Table 2). Increasing age, number of complex chronic conditions, length of stay, and surgical encounters were associated with an increased odds of DDI exposure (Table 2). After adjusting for hospital and clinical factors, there was wide variation in rates of DDI prescribing across hospitals (Fig. 1). There was also substantial hospital-level variation of exposures to individual drug pairings (Fig. 2).

Conclusion(s): Patients are frequently exposed to medications at high risk for clinically significant DDIs at U.S. children's hospitals. Exposure risk varied substantially across hospitals. Further study is needed to determine the rate of adverse events due to DDI exposures and factors amenable for interventions promoting safer medication use.

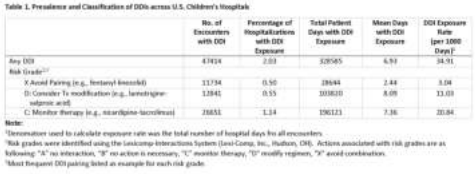

Table 1. Prevalence and Classification of DDIs across U.S. Children's Hospitals

	No. of Encounters with DDI	Percentage of Hospitalizations with DDI Exposure	Total Patient Days with DDI Exposure	Mean Days with DDI Exposure	DDI Exposure Rate (per 1000 Days)[1]
Any DDI	47414	2.03	329585	6.93	34.91
Risk Grade[2,3]					
X: Avoid Pairing (e.g., fentanyl-linezolid)	11734	0.50	28644	2.44	3.04
D: Consider Tx modification (e.g., lamotrigine-valproic acid)	12841	0.55	103810	8.09	11.03
C: Monitor therapy (e.g., nicardipine-tacrolimus)	28851	1.24	196123	7.36	20.84

Note:
[1]Denominator used to calculate exposure rate was the total number of hospital days for all encounters.
[2]Risk grades were identified using the Lexicomp Interactions System (Lexi-Comp, Inc., Hudson, OH). Actions associated with risk grades are as following: "A" no interaction, "B" no action is necessary, "C" monitor therapy, "D" modify regimen, "X" avoid combination.
[3]Most frequent DDI pairing listed as example for each risk grade.

Table 2. Risk Factors for DDI Exposure in Hospitalized Children

		aOR	95% CI
Age group	<1	0.42	0.41, 0.43
	1-4	0.59	0.57, 0.61
	5-11	0.80	0.78, 0.82
	12-17	Reference	
	18-25	1.42	1.37, 1.47
Gender	Male	Reference	
	Female	0.91	0.90, 0.93
Race	Non-Hispanic White	Reference	
	Non-Hispanic Black	0.81	0.79, 0.83
	Hispanic	1.00*	0.97, 1.03
	Asian	1.00*	0.94, 1.05
	Other	0.85	0.82, 0.88
Payer	Government	Reference	
	Private	0.89	0.87, 0.91
	Other	1.12	1.07, 1.17
Number of CCC	0	Reference	
	1	2.95	2.87, 3.03
	2-3	4.49	4.37, 4.63
	>3	5.17	4.96, 5.39
ICU	No	Reference	
	Yes	0.98*	0.95, 1.00
Length of Stay (d)			
	1	0.76	0.74, 0.78
	2-3	Reference	
	4-7	1.22	1.19, 1.26
	8-14	1.92	1.86, 1.98
	15-30	2.81	2.71, 2.92
	>30	5.80	5.56, 6.05
Service line	Medical	Reference	
	Surgical	1.42	1.39, 1.45
Geographic Regions	Midwest	0.92*	0.74, 1.14
	Northeast	0.93*	0.73, 1.23
	South	Reference	
	West	0.85*	0.69, 1.08

Note: All values statistically significant (p<0.05) except were noted with Asterix (*)

Figure 1

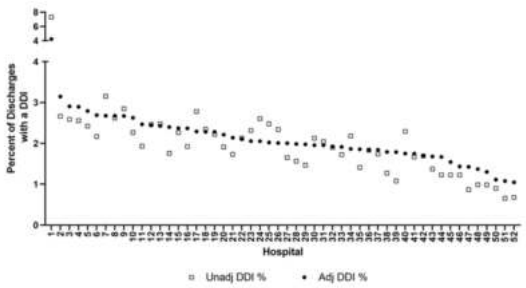

Figure 1. Variation in DDI Exposures Across U.S. Children's Hospitals. Hospital level variation in total DDI exposure across 52 children's hospitals. Adjusted proportions were derived using multivariable logistic regression incorporating the following covariates: age, sex, race and/or ethnicity, payer, number of complex chronic conditions , length of stay , service lines, geographic region, ICU status and case mix index for each hospitalization.

Figure 1. Variation in DDI Exposures Across U.S. Children's Hospitals

Figure 2

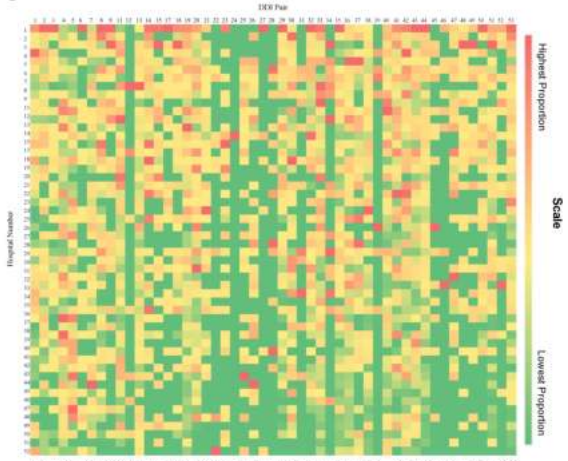

Figure 2. Variation of individual DDI pairings in U.S. Children's Hospitals. Hospital-level variation in DDI prescribing as a heat map: proportion of individual hospital rates of individual DDI exposure are ordered from highest exposure rates (top) to lowest (bottom). High Risk DDI pairings are represented as columns. Color values correspond to proportions of exposure to individual DDI pairings (highest to lowest exposure rate color coding: red, yellow, orange, green) using a linear gradation conditional model. For example, DDI pair #44 (carbamazepine-cyclosporine) has a large variation, with all hospitals having exposure (ranging from 0.01-3.6%). In contrast, DDI pair #24 has little variation, where out of 52 hospitals only one had any exposure.

Figure 2. Variation of individual DDI pairings in U.S. Children’s Hospitals.

IMAGE CAPTION:

Table 1. Prevalence and Classification of DDIs across U.S. Children’s Hospitals

Table 2. Risk Factors for DDI Exposure in Hospitalized Children

Figure 1. Variation in DDI Exposures Across U.S. Children's Hospitals

Figure 2. Variation of individual DDI pairings in U.S. Children's Hospitals.

CONTROL ID: 3373416

TITLE: Variation in care of infants with congenital heart disease hospitalized with bronchiolitis

PRESENTER: Namrata Ahuja

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CURRENT CATEGORY: Hospital-based Medicine

CURRENT SUBCATEGORY: None

KEYWORDS:

SESSION TITLE: Hospital-based Medicine: HSR |Hospital-based Medicine: HSR

SESSION TYPE: Webinar|Platform

ABSTRACT BODY:

Background: Current viral bronchiolitis guidelines discourage routine use of inhaled beta-2-agonists and hypertonic saline. Guidelines exclude infants with congenital heart disease (CHD), and variations in the use of beta-agonists and hypertonic saline in this population and any association with clinical outcomes are unknown.

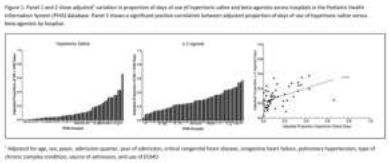
Objective: To evaluate the hospital-level association between variations in beta-2-agonist and hypertonic saline use and outcomes among infants with CHD hospitalized with bronchiolitis.

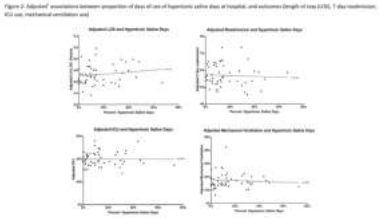
Design/Methods: We performed a multicenter retrospective cohort study using administrative data from 52 hospitals from 1/1/15 to 6/30/19. We included infants ≤12-months-old hospitalized for a primary diagnosis of bronchiolitis and secondary diagnosis of CHD. For patients with >1 hospitalization, the index hospitalization was used. The primary exposure was the hospital-level proportion of days that patients received beta-2-agonists and hypertonic saline. Linear regression models assessed the association between the primary exposure and length of stay (LOS), 7-day readmission, mechanical ventilation use, and ICU utilization. Hospital-level outcomes were adjusted for patient covariates using generalized linear mixed-effect models with a random hospital effect to account for clustering of patients by center.

Results: We identified 6,846 index hospitalizations for bronchiolitis in infants with CHD, with a median age of 4 months (Table 1). Median LOS was 4 days [IQR 2-7], 7-day readmission rate was 6.0%, 19.2% were mechanically ventilated, and 41.6% utilized the ICU. Overall, 43% received beta-2-agonists and 23% hypertonic saline during hospitalization. The proportion of days of use of beta-2-agonists and hypertonic saline varied widely across hospitals in our covariate adjusted model, ranging from 3.6% to 57.4% for beta-2-agonists and 0.0% to 65.8% for hypertonic saline. There was a significant correlation between hospital-level use of beta-agonists and hypertonic saline (Figure 1). For both beta-2-agonists and hypertonic saline, adjusted models showed no statistically significant associations between proportion of days of use and outcomes (Figures 2 and 3).

Conclusion(s): For children with CHD hospitalized with viral bronchiolitis, hospital-level use of beta-2-agonists and hypertonic saline varied widely, and their use was not associated with clinical outcomes. Similar to healthy children with

bronchiolitis, beta-2-agonists and hypertonic saline may not be beneficial in children with CHD.





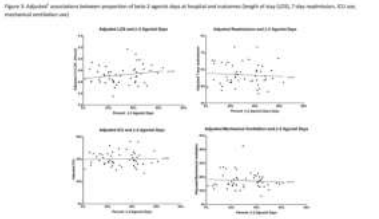


IMAGE CAPTION:

CONTROL ID: 3368525

TITLE: Transition from Intravenous to Oral Antibiotics in Hospitalized Children: Opportunities for Antibiotic Stewardship

PRESENTER: Jillian Cotter

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CURRENT CATEGORY: Hospital-based Medicine

CURRENT SUBCATEGORY: None

KEYWORDS: antibiotic stewardship, intravenous antibiotics, common infections.

SESSION TITLE: Hospital-based Medicine: HSR |Hospital-based Medicine: HSR

SESSION TYPE: Webinar|Platform

ABSTRACT BODY:

Background: Children hospitalized with bacterial infections often receive intravenous (IV) antibiotics for most of the hospitalization. However, data for many infections support earlier transition from IV to oral antibiotics, which may be associated with lower costs, decreased length of stay, and fewer IV complications.

Objective: To determine the potential opportunity to transition from IV to oral antibiotics for children hospitalized with bacterial infections and describe variability among children's hospitals.

Design/Methods: This is a multicenter, retrospective cohort study using the Pediatric Health Information System. We included children age 60 days to 18 years hospitalized in 2017-2018 with seven common bacterial infections (Table 1). We excluded children requiring intensive care and those with complex chronic conditions. Opportunity days were defined as days patients received IV antibiotics and at least one oral non-antibiotic medication, suggesting an ability to take oral medications. We excluded days on antibiotics without an oral alternative (e.g. vancomycin). Percent opportunity was defined as the number of opportunity days divided by the number of days patients received any antibiotics (antibiotic days). We calculated total opportunity days and percent opportunity for individual infections and generated heat maps to compare across hospitals.

Results: We identified 88,522 opportunity days in over 100,000 hospitalizations for infections across 51 hospitals (Table 1). A majority (57%) of antibiotic days had an opportunity to switch from IV to oral. Encounters for skin and soft tissue infections (SSTI), neck infections, and pneumonia had the highest number of opportunity days. Osteomyelitis, septic arthritis and urinary tract infections had the highest percent opportunity to switch from IV to oral (Table 2). There was substantial variation in timing of transition across hospitals and infections (Figure 1). The most commonly used IV antibiotics with opportunity to switch to oral included clindamycin, ceftriaxone, and ampicillin-sulbactam (Table 3).

Conclusion(s): In a multicenter study of children hospitalized for common infections, over half of antibiotic days had the potential opportunity to transition from IV to oral treatment. The opportunity varied by infection, antibiotic, and hospital. Quality improvement efforts focused on promoting earlier transition to oral therapy for antibiotics with good bioavailability (e.g. clindamycin), could lead to substantial reductions in healthcare utilization.

		Pneumonia	Peri/Orbital Cellulitis	SSTI[1]	Neck Infection	UTI/ Pyelo[2]	Osteo-myelitis	Septic Arthritis
Number of Discharges		22,605	4,150	24,756	33,665	8,673	2,812	1,462
Age (years)	<1	11%	10%	12%	4%	35%	4%	7%
	1-4	55%	38%	34%	34%	22%	25%	43%
	5-9	22%	29%	23%	25%	18%	26%	27%
	10-18	12%	24%	32%	37%	25%	45%	23%
Sex	Male	51%	59%	54%	55%	20%	61%	59%
	Female	49%	41%	46%	45%	80%	39%	41%
Race	Non-Hispanic White	45%	44%	48%	50%	69%	54%	55%
	Non-Hispanic Black	17%	23%	19%	20%	10%	15%	13%
	Hispanic	24%	18%	22%	18%	28%	19%	19%
	Asian	4%	3%	3%	2%	3%	3%	4%
	Other	11%	9%	9%	10%	9%	10%	9%
Payor	Government	54%	55%	61%	56%	60%	46%	42%
	Private	45%	41%	38%	40%	37%	51%	54%
	Other	3%	4%	4%	4%	4%	4%	4%
Case Mix Index	*Mean (Std Dev)*	0.4 (0.3)	0.4 (0.3)	0.4 (0.3)	0.4 (0.2)	0.4 (0.2)	1 (0.6)	1 (0.5)
Length of stay (days)	*Median [IQR]*	2 [1, 3]	2 [1, 3]	2 [1, 2]	1 [1, 2]	2 [1, 3]	4 [3, 6]	4 [3, 5]

Table 1. Cohort Demographics by Diagnosis

[1]SSTI, skin soft tissue infection

[2]UTI/pyelo, urinary tract infection/pyelonephritis

	Pneumonia	Peri/Orbital Cellulitis	SSTI[1]	Neck Infection	UTI/ Pyelo[2]	Osteo-myelitis	Septic Arthritis
Antibiotic days	51,771	10,421	58,311	43,295	19,383	10,967	5,912
Opportunity days	17,238	4,254	25,359	21,696	10,334	5,948	3,693
Percent opportunity	40%	58%	60%	64%	67%	69%	73%

Table 2. Opportunity to Transition to Oral Antibiotics by Diagnosis

[1]SSTI, skin soft tissue infection

[2]UTI/pyelo, urinary tract infection/pyelonephritis

Antibiotic	Pneumonia	Peri/ Orbital Cellulitis	SSTI	Neck Infections	UTI/ Pyelo[2]	Osteo-myelitis	Septic Arthritis	Total opportunity days
Clindamycin	2,357	3,154	22,404	11,538	67	3,039	1,734	**44,293**
Ceftriaxone	8,767	1,261	1,330	1,882	9,518	437	701	**23,896**
Ampicillin-sulbactam	812	2,038	4,846	7,504	67	164	51	**15,484**
Ampicillin	8,734	10	211	596	862	115	170	**10,698**
Cefazolin	60	53	2,806	856	388	3,119	2,069	**9,351**
Azithromycin	913	1	15	50	8	-	2	**989**
Metronidazole	22	75	346	26	41	27	4	**551**
Nafcillin	2	30	136	27	1	212	96	**504**
Ciprofloxacin	16	4	214	7	178	34	1	**454**
Oxacillin	7	4	75	10	5	213	94	**408**

Table 3. Number of Opportunity Days by Antibiotic

Top 10 antibiotics with largest number of opportunity days.

[1]SSTI, skin soft tissue infection

[2]UTI/pyelo, urinary tract infection/pyelonephritis

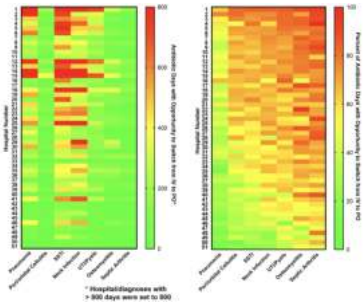

Figure 1. Heat Maps of Opportunity Days and Percent Opportunity by Diagnosis and Hospital

Hospital-level variation in total number of days (left) and percent of antibiotic days (right) with opportunity to switch from IV to oral antibiotics as a heat map ordered form highest opportunity (top) to lowest opportunity (bottom). Individual hospitals are displayed on the rows and are consistent across both charts. Diagnoses are displayed as columns. Color values within each diagnosis (in order, red representing highest and green representing lowest) correspond to the total opportunity days (left) or percent opportunity (right).

IMAGE CAPTION:
Table 1. Cohort Demographics by Diagnosis

[1]SSTI, skin soft tissue infection

[2]UTI/pyelo, urinary tract infection/pyelonephritis

Table 2. Opportunity to Transition to Oral Antibiotics by Diagnosis

[1]SSTI, skin soft tissue infection

[2]UTI/pyelo, urinary tract infection/pyelonephritis

Table 3. Number of Opportunity Days by Antibiotic

Top 10 antibiotics with largest number of opportunity days.

[1]SSTI, skin soft tissue infection

[2]UTI/pyelo, urinary tract infection/pyelonephritis

Figure 1. Heat Maps of Opportunity Days and Percent Opportunity by Diagnosis and Hospital

Hospital-level variation in total number of days (left) and percent of antibiotic days (right) with opportunity to switch from IV to oral antibiotics as a heat map ordered form highest opportunity (top) to lowest opportunity (bottom). Individual hospitals are displayed on the rows and are consistent across both charts. Diagnoses are displayed as columns. Color values within each diagnosis (in order, red representing highest and green representing lowest) correspond to the total opportunity days (left) or percent opportunity (right).

CONTROL ID: 3373736

TITLE: Opioid Use to Treat Migraine Headaches in Hospitalized Children and Adolescents

PRESENTER: Abbey Rachel Masonbrink

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CURRENT CATEGORY: Hospital-based Medicine

CURRENT SUBCATEGORY: None

KEYWORDS: Migraine, Opioid.

SESSION TITLE: Hospital-based Medicine: HSR |Hospital-based Medicine: HSR

SESSION TYPE: Webinar|Platform

ABSTRACT BODY:

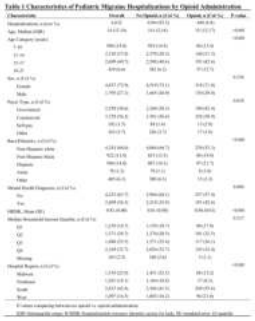
Background: National guidelines advise against the use of opioids for migraine headache due to risk for diminished abortive response and development of chronic headache. However, use of opioids to treat migraine headaches in children persists in some clinical settings. Little is known about the prevalence of opioid use for pediatric migraines in the inpatient setting.

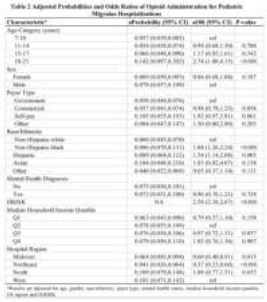
Objective: Evaluate rates of opioid administration in pediatric patients hospitalized for migraine headache, describe characteristics, inter-hospital variation and discharge outcomes associated with opioid administration.

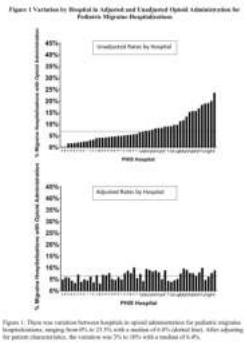
Design/Methods: Using data from the Pediatric Health Information System, a database containing pediatric hospital administrative and billing information, we performed a cross-sectional study to investigate the prevalence and predictors of opioid administration for children aged 7-21 years who were hospitalized for migraine headache between 1/1/2015-12/31/2018. We excluded hospitalizations during which an opioid may have been administered for reasons other than for migraine pain management. We modeled the likelihood of opioid administration using generalized linear mixed modeling. Finally, we assessed variations in rates of opioid administration between hospitals and discharge outcomes including length of stay and readmission rates.

Results: We identified 6,632 hospitalizations for migraine at 50 hospitals, of these, an opioid was administered during 448 (7%) (Table 1). Characteristics associated with receiving an opioid included: non-Hispanic Black race/ethnicity (aOR1.68, p <0.001), older age (18-21 years: aOR2.74, p <0.001, reference 7-10 years), and higher illness severity (aOR 2.58, p <0.001). Hospitalizations during which an opioid was administered had a longer length of stay (aRR 1.48, p <0.001) and higher 30-day readmission rate (aOR 1.96, p <0.001). Pediatric hospitals varied in their rates of opioid administration, ranging from 0%-23.5% of migraine hospitalizations (Figure 1). Hospitals with higher opioid administration rates demonstrated higher adjusted readmission rates (p <0.001) and higher adjusted rates of return ED visits (p=0.026) (Figure 2).

Conclusion(s): Opioids continue to be used during pediatric migraine hospitalizations and are associated with longer lengths of stay and readmissions. These findings reveal important opportunities to improve adherence to migraine treatment guidelines and minimize unnecessary opioid exposure, with the potential to improve hospital discharge outcomes.







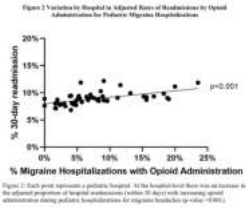


IMAGE CAPTION:

CONTROL ID: 3375503

TITLE: Acute care hospitalizations for acetaminophen poisoning among children and adolescents in the US, 2016.

PRESENTER: Kristin Shadman

AUTHORS (LAST NAME, FIRST NAME): Shadman, Kristin[1]; Edmonson, M B.[1]; Coller, Ryan J.[1]; Sklansky, Daniel J.[1]; Barreda, Christina B.[1]; Nacht, Carrie[1]; Zhao, Qianqian[1]; Kelly, Michelle M.[1]

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CURRENT CATEGORY: Hospital-based Medicine

CURRENT SUBCATEGORY: None

KEYWORDS: acetaminophen, adolescents, intentional poisoning.

SESSION TITLE: Hospital-based Medicine: HSR |Hospital-based Medicine: HSR

SESSION TYPE: Webinar|Platform

ABSTRACT BODY:

Background: Injuries are the number one cause of death in US children, and medication poisoning is a leading cause of injury-related death. While acetaminophen remains one of the most common over-the-counter medications sold in the US, the rate and outcomes of acute care hospitalizations attributed to acetaminophen poisonings in children have not been evaluated in nearly 10 years.

Objective: Quantify: 1) the annual incidence and characteristics of acute care hospitalization for acetaminophen poisoning in children, and 2) the proportion of all hospitalizations for intentional medication poisoning associated with acetaminophen poisoning.

Design/Methods: We used nationally representative data from the most recent Kids' Inpatient Database and a validated ICD-10 diagnostic coding algorithm to identify hospitalizations of children 0-19 years old coded for acetaminophen poisoning in 2016. We calculated population rates using US census estimates and described length of stay, discharge disposition, and total hospital charges.

Results: There were 9,935 (95% CI: 9,252-10,619) discharges from acute care hospitals for acetaminophen poisoning in US children 0-19 years old during 2016 (Table 1), which corresponds to a population rate of 12.1 (95% CI: 11.3-12.9) hospitalizations per 100,000 children. The rate was highest in adolescence, reaching 35.5 (95% CI: 33.2-37.7) per 100,000 children 15-19 years old. The median length of stay was 1.6 days (IQR: 0.66-3.12 days); however, half of these discharges were subsequently transferred to another hospital or health care facility, including psychiatric facilities (49.8%; 95% CI: 46.8-51.0). Median hospital charges for acute care were $14,379 (IQR: $9,162-$23,114) per hospitalization and $204.7 (95% CI: $187.4-$221.9) million in aggregate. Among all hospitalizations for intentional medication poisonings in children 0-19 years old (n=18,847), acetaminophen poisoning (n=8,530) was the most common (45.3%; 95% CI: 44.2%-46.3%).

Conclusion(s): Acetaminophen poisoning is the most common cause of pediatric acute care hospitalization due to intentional medication poisoning in the US, and is associated with costly care. More effective acetaminophen poisoning prevention strategies are needed, such as those successfully implemented in the UK, which may reduce the burden of this common malady on children and the health care system.

Table 1. Characteristics of Acute Care Hospitalizations Coded for Acetaminophen Poisoning, 2016

IMAGE CAPTION:
Table 1. Characteristics of Acute Care Hospitalizations Coded for Acetaminophen Poisoning, 2016

CONTROL ID: 3382523

TITLE: Providing doctors' notes to parents during hospitalization: A qualitative study

PRESENTER: Michelle M. Kelly

AUTHORS (LAST NAME, FIRST NAME): Kelly, Michelle M.[1]; Nacht, Carrie[1]; Sklansky, Daniel J.[1]; Arnott Smith, Catherine[2]; Hoonakker, Peter L.[2]; Smith, Windy M.[3]; Dean, Shannon[1]; Sprackling, Carley M.[1]; Zellmer, Ben M.[1];

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CURRENT CATEGORY: Hospital-based Medicine

CURRENT SUBCATEGORY: None

KEYWORDS: family engagement, electronic health record, patient portal.

SESSION TITLE: Hospital-based Medicine: HSR |Hospital-based Medicine: HSR

SESSION TYPE: Webinar|Platform

ABSTRACT BODY:

Background: While sharing doctors' office visit notes has provided benefits for patients and their caregivers in the ambulatory setting, the effects of having access to doctors' notes on parents during their child's acute hospitalization are unknown.

Objective: Describe parent attitudes and perceptions of accessing doctors' admission and daily progress notes at the bedside during their child's hospitalization.

Design/Methods: In this qualitative study, doctors' admission and progress notes were made available to a purposive sample of English-speaking parents or legal-guardians of children <12 years old admitted to a hospitalist service at a tertiary children's hospital between April-August 2019. Electronic health record notes were shared daily through an inpatient portal application (MyChart Bedside, **Figure 1**) on a hospital-supplied bedside iPad. Upon discharge, researchers conducted semi-structured, in-person interviews to elicit parent attitudes and perceptions of accessing notes. Interviews were audio-recorded, transcribed and coded by three researchers who used thematic content analysis to identify emergent themes.

Results: Of 28 parents, 75% were mothers, 61% were non-Hispanic white and 64% had less than a 4-year college degree. Nine themes emerged clustering around parent perceptions of the benefits and detriments of accessing doctors' notes during hospitalization. Five themes were related to the benefits of having notes (**Table 1**): (1) plan of care; (2) positive emotional effects (e.g., trust, reassurance, reduced anxiety); (3) advocacy and autonomy (e.g., empowerment, less reliance on staff); (4) enhanced commination; and (5) improved knowledge. Four themes emerged regarding the detriments of having notes (**Table 2**): (1) negative emotional effects (e.g., increased anxiety); (2) confusion (e.g., due to medical jargon, driving online information seeking); (3) communication issues (e.g., release of information before face-to-face communication); and (4) problems with note content (e.g., inaccurate or outdated information). All parent participants wanted access to notes during future hospital stays.

Conclusion(s): Results suggest that sharing doctors' daily notes may facilitate family engagement in pediatric inpatient care; however, implementation strategies should be developed to maximize the benefits and minimize potential detriments for patients, families and providers.

Table 1. Parent perceptions of the benefits of accessing doctors' notes during hospitalization

Theme	Definition	Illustrative parent quote	Frequency
1. Plan of care	Provided parents with a recapitulation of the "game plan" and increased transparency of doctors' viewpoint	"It's beneficial because you always know what's going on. Everyone is so busy . . . being able to have the actual plan right there, you can read it yourself when you have time, and you can refer back to it if you need it. I think that's huge."	194
2. Positive emotional effects	Helped parents build trust in the care team and led to other positive emotions, such as reassurance and/or decreased anxiety	"Being able to read the doctors' notes, it helps a lot because I'm not, I wasn't as worried. I'm like, OK, they got this."	115
3. Advocacy and autonomy	Enhanced parent empowerment, allowing parents to rely less on staff for questions and to advocate for their child as part of the care team	"[Notes] kind of made me feel empowered . . . It's really important that you feel like they're taking your feedback too, and that you're participating, and that you're part of the treatment team . . ." ". . . I can go right [to the note] . . . it's not like I have to go bother the nurse . . . I just go to look on here, and then my questions are answered."	117
4. Enhanced communication	Improved parent communication with the healthcare team, the child patient and/or other family members	"It helped my communication with other people who were concerned for us greatly . . . [I was] able to use [the notes] as a resource for myself to make sure that communication was right . . . it was a huge tool in being able to relay that information."	100
5. Improved knowledge	Facilitated parent understanding and improved their health literacy	"[Notes] help us understand a lot of things, things that they mention [on] rounds . . . things like we wasn't aware of, [that] probably skipped over our head at the moment . . ."	97

Table 2. Parent perceptions of the detriments of accessing doctors' notes during hospitalization

Theme	Definition	Illustrative parent quote	Frequency
1. Negative emotional effects	Induced negative emotions for parents, such as increased anxiety or decreased trust	"One thing that's hard when you have a kid with lots of diagnoses is seeing them all on paper together . . . it's a little confronting. . ." "I am kind of a worrier . . . to see [the] worst-case [scenarios] . . . I was a little alarmed at first."	52
2. Confusion	Difficulties with note comprehension leading to confusion and/or online information seeking	". . . there's a lot of word that I don't know . . . I thought I could google this."	38
3. Communication issues	Impaired communication in communication of information that had not yet been explained by healthcare team	"Like we didn't know he had liver damage, but we just found out . . . through the doctor notes . . . it was something new that we wasn't aware of that they didn't tell us at the time or that skipped over our head when they spoke about it because there was so much going on."	31
4. Problems with note content	Problems with note content, such as inaccuracies, outdated or excessive information	"Probably the only thing that was a little weird was the history because sometimes you find three little things where somebody heard something wrong." "A thousand things change throughout the day . . . [the note] felt like immediately out of date."	24

IMAGE CAPTION: