Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Patient Safety
Outpatient parenteral antimicrobial therapy (OPAT) in a safety-net hospital: Opportunities for improvement
Rory Bouzigard; Mark Arnold; Jacob Player; Norman Mang; Michael Lane; Trish Perl and Laila Castellino

Background: Parkland Health is a 900-bed safety-net hospital that serves Dallas County, Texas. It has an OPAT program in which patients are managed via self-administration (S-OPAT), home-health/hemodialysis (H-OPAT), and skilled nursing facilities (SNF-OPAT). We evaluated the reasons for unscheduled emergency department (ED) visits by patients in these groups to identify strategies to decrease unexpected healthcare utilization and to improve safety. **Methods:** We performed a retrospective chart review of all adult patients discharged from Parkland Health on OPAT between April and June 2021. Demographic, medical, and healthcare utilization information, including the date and reason of first unscheduled ED visit after discharge, was collected utilizing a standardized instrument. The institutional review board approved this study. **Results:** In total, 184 patients were discharged with OPAT. Among them, 32% were female and 55% identified as Hispanic; 41% were non-English speakers, and 45% were treated for a musculoskeletal infection. Among all OPAT models of care, 43.4% were S-OPAT patients, 31.5% were H-OPAT patients, and 25% were SNF-OPAT patients (Table 1). The groups differed, and fewer African Americans received H-OPAT. Also, 45% were being treated for musculoskeletal infections and were more likely to be discharged with H- or SNF-OPAT. In addition, 41% were being treated for endovascular infections and 21.7% were being treated for genitourinary infections. The total length of stay in the hospital was longer for SNF-OPAT patients and shorter for S-OPAT patients (Table 2). Among 184 OPAT patients, 41 patients (22.2%) had an ED visit: 17.3% SNF-OPAT patients, 27.6% H-OPAT patients, and 21.3% S-OPAT patients (Table 2). ED visits were attributed to intravenous (IV) access–related problems (12 of 41, 29.0%), worsening of known infection (3 of 41, 7.3%), and abnormal blood test results (2 of 41, 4.9%). Also, 24 ED visits (58%) were not related to underlying infection or OPAT. However, when examined by the OPAT care model, 41% of ED visits among S-OPAT patients, 20% among H-OPAT visits, and 25% among SNF-OPAT visits were related to IV access issues. Among S-OPAT ED visits pertaining to IV access, 71% were for minor issues such as dressing changes or line occlusion or malfunction. **Conclusions:** One-fifth of OPAT patients had an unscheduled ED visit, of whom 20%–41% had issues with IV access. Many of these visits could be avoided with enhanced outreach to patients discharged with OPAT and improved ambulatory capabilities to provide standard services related to maintenance of IV access.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s96
doi:10.1017/ash.2023.364

Table 1

Patient characteristics (n)	Total 184 (100.0%)		SNF-OPAT 46 (25%)		H-OPAT 58 (31.5%)		S-OPAT 80 (43.4%)	
Age, mean (SD), years	54.0	(13.8)	55.3	(13.5)	57.1	(14.8)	51.4	(12.9)
Female, n (%)	58.0	(31.5)	9.0	(19.5)	20.0	(34.4)	29.0	(36.2)
Race, n (%)								
White	128.0	(69.6)	25.0	(54.3)	39.0	(67.2)	64.0	(80.0)
Black or African-American	51.0	(27.7)	21.0	(46.6)	16.0	(28.0)	14.0	(70.0)
Asian	3.0	(1.6)	0.0	0.0	3.0	(5.3)	0.0	0.0
American Indian or Alaska Native	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Native Hawaiian or other Pacific Islander	2.0	(1.1)	0.0	0.0	0.0	0.0	2.0	(2.5)
Hispanic ethnic group, n (%)	101.0	(54.9)	14.0	(30.4)	26.0	(56.5)	61.0	(76.2)
Language n, (%)								
English	108.0	(58.7)	40.0	(86.9)	38.0	(65.5)	30.0	(37.5)
Spanish	72.0	(39.1)	6.0	(13.0)	18.0	(31.0)	48.0	(60.0)
Other	4.0	(2.2)	0.0	0.0	2.0	(3.4)	2.0	(2.5)
Infectious disease diagnosis for OPAT, n (%) *								
Bone and joint infection	83.0	(45.1)	24.0	(52.1)	28.0	(48.2)	31.0	(38.7)
Endovascular infection	77.0	(41.8)	18.0	(39.1)	21.0	(36.2)	38.0	(48.1)
Skin and soft tissue infection	17.0	(9.2)	4.0	(8.7)	9.0	(15.5)	4.0	(5.0)
Central nervous system infection	14.0	(7.6)	6.0	(13.0)	3.0	(5.2)	5.0	(6.3)
Intra-abdominal infection	11.0	(6.0)	3.0	(6.5)	2.0	(3.4)	6.0	(7.5)
Genitourinary infection	40.0	(21.7)	3.0	(6.5)	12.0	(20.6)	25.0	(31.2)
Pulmonary infection	4.0	(2.2)	0.0	0.0	1.0	(1.8)	3.0	(3.8)
ENT infection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.0	(0.5)	0.0	0.0	1.0	(1.7)	0.0	0.0

*Patients could have more than 1 diagnosis

Table 2

Baseline Patient characteristics	Total		SNF-OPAT		H-OPAT		S-OPAT	
Hospital length of stay, days, median (IQR)	10.0	(8.0)	15.0	(6.8)	10.0	(7.0)	8.0	(4.0)
Had ID consult prior to discharge, n (%)	161.0	(87.5)	44.0	(95.6)	49.0	(84.4)	68.0	(85.0)
Had OPAT pharmacy consult, n (%)	183.0	(99.5)	46.0	(100.0)	58.0	(100.0)	79.0	(98.7)
Visited ED within 30 days, n (%)	41.0	(22.3)	8	(17.3)	16	(27.5)	17	(21.2)

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Pediatrics
Association of postnatal age with neonatal hospital-onset bacteremia in a multicenter, retrospective cohort
Erica Prochaska; Shaoming Xiao; Elizabeth Colantuoni; Sagori Mukhopadhyay; Dustin Flannery; Ibukun Kalu; Danielle Zerr; Amanda Adler and Aaron Milstone

Background: Prevention of hospital-onset bacteremia (HOB) in all settings is a healthcare priority. The CDC is developing a neonatal-specific HOB quality metric, but the epidemiology of neonatal HOB is poorly understood. Our objective was to validate a prior single-center finding that HOB risk varies by birthweight and postnatal age in a multicenter cohort. **Methods:** We performed a multicenter, retrospective cohort study of neonates admitted to 4 neonatal intensive care units (NICUs) for ≥4 days between July 1, 2016, and July 1, 2021. HOB was defined as a positive blood culture for bacteria or fungi on day ≥4 of admission. The first HOB event in the hospitalization was counted per neonate. Repeat HOB events during a neonate's admission were excluded. Poisson regression models with robust variance estimates were used to estimate the incidence rate (IR) of HOB, expressed as HOB events per 1,000 patient days and IR ratios (IRRs), within strata defined by CDC birthweight categories and 4-week postnatal age intervals, adjusting for central venous catheter (CVC) presence at time of HOB and study site. **Results:** The analysis included 9,267 neonates, contributing 191,295 patient days and 470 HOB events, with an unadjusted IR of 2.46 per 1,000 patient days (Table 1). Of 477 infants born ≤750 g, 153 (30.1%) had a HOB with an IR of 13.3 (95% CI, 10.5–16.0) events per 1,000 patient days in the first 4 weeks after birth (Fig. 1). After adjusting for CVC presence and study site, infants ≤750 g had a higher HOB rate in the first 4 weeks of life (IRR, 7.45; 95% CI, 3.81–14.56) compared to infants ≥2,500 g. After 8 weeks of life, there was no difference in HOB rate in the 2 groups (IRR, 0.8, 95% CI, 0.3–2.7). **Conclusions:** Neonates born ≤750 g were at highest risk for HOB within the first 4 weeks after birth; however, risk for

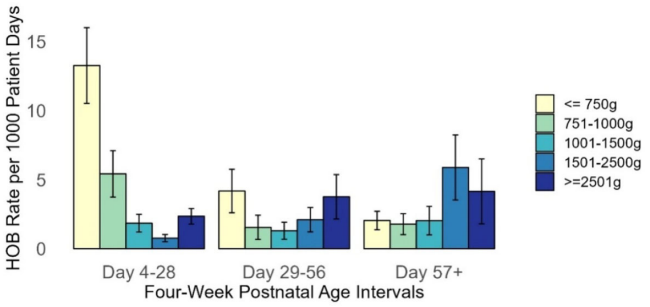
Table 1: Maternal and Neonatal Demographic and Clinical Characteristics

	No HOB[a] N = 8797	HOB N=470	Total N=9267
Site[b], N (%)			
A	4688 (53.3)	107 (22.8)	4795 (51.7)
B[c]	2106 (23.9)	84 (17.9)	2190 (23.6)
C	2003 (22.8)	279 (59.4)	2282 (24.6)
Clinical Characteristics, N (%)			
Birthweight			
≤ 750g	324 (3.7)	153 (32.6)	477 (5.1)
751 - 1000g	351 (4)	73 (15.5)	424 (4.6)
1001g - 1500g	791 (9)	64 (13.6)	855 (9.2)
1501g - 2500g	3219 (36.6)	80 (17)	3299 (35.6)
≥ 2501g	4112 (46.7)	100 (21.3)	4212 (45.5)
Presence of a Central Line	2952 (33.6)	376 (80)	3328 (35.9)
Mortality	231 (2.6)	87 (18.5)	318 (3.4)
Sociodemographic Characteristics, N (%)			
American Indian or Alaska Native	97 (1.1)	14 (3)	111 (1.2)
Asian or Pacific Islander	583 (6.6)	44 (9.4)	627 (6.8)
Black	3408 (38.7)	137 (29.1)	3545 (38.3)
White	3771 (42.9)	200 (42.6)	3971 (42.8)
Two or more	59 (0.7)	3 (0.6)	62 (0.7)
Unknown	879 (10)	72 (15.3)	951 (10.3)
Hispanic or Latino	1063 (12.1)	81 (17.2)	1144 (12.3)
Not Hispanic or Latino	7483 (85.1)	373 (79.4)	7856 (84.8)
Unknown Ethnicity	251 (2.9)	16 (3.4)	267 (2.9)

a: Hospital-onset bacteremia

b: Three academic sites contributed four NICUs

c: Infants included from July 2019-July 2021



HOB was not consistent over time. Postnatal age should be considered in a neonatal HOB quality metric.
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s96–s97
doi:10.1017/ash.2023.365

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Quality Assessment
Team-based infection preventionist review improves interrater reliability in identification of hospital-acquired infections
Alyssa Castillo; Sarah Totten and Larissa Pisney

Background: The University of Colorado Health (UCHealth) metropolitan region is composed of 4 hospitals. Therein, 10 infection preventionists (IPs) retrospectively review all cases of potential central-line–associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), and surgical site infection (SSI) to adjudicate whether each case meets the NHSN definitions for hospital-acquired infection (HAI). In August 2021, the UCHealth IP team structure transitioned from a subject-matter expert model (in which each IP reviewed a specific HAI) to a unit-based model (in which each IP reviewed all HAIs and SSIs on their assigned units) to create redundancy in knowledge and skill. The IP team subsequently instituted a weekly meeting to review all potential cases of HAI. We hypothesized that this review structure would result in increased consistency in the application of NHSN definitions across the UCHealth hospitals and units. **Methods:** From August 17, 2022, through March 3, 2023, the UCHealth IPs, managers, and medical directors met weekly for 1 hour via teleconferencing. Each IP presented key details for all near-miss and confirmed cases of SSI or HAI on their respective units and received questions and feedback from their peers and medical directors. Case determination was based on team discussion and consensus. If there was discordance in the interpretation of an NHSN case definition, a formal inquiry was sent to resolve the uncertainty. The number of cases reviewed, case determinations changed, and formal inquiries to NHSN were tracked. **Results:** During the study period, the IP team convened weekly meetings and reviewed 248 patient cases—of which 208 (83.9%) were confirmed HAIs. Based on collaborative team discussion, 14 cases (5.6%) were changed from reportable to nonreportable. Three cases (1.2%) originally thought to be nonreportable were changed to reportable. The HAI determination of a reportable case (eg, revision of a "superficial" SSI to "deep" SSI) was changed for 9 (6.0%). Following team discussion, 13 formal inquiries were sent to the NHSN to clarify case definitions, and these responses were collated for future reference. **Conclusions:** Team-based IP review of HAI cases improves consistency in application of NHSN case definitions and highlights areas of uncertainty in their interpretation. This team-based model of case review is a useful educational and practical tool to increase interrater reliability in case adjudication across large teams of IPs, to create a systematic way to query NHSN, and to ensure that knowledge gained is disseminated for future benefit.
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s97
doi:10.1017/ash.2023.366

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Respiratory viruses other than SARS-CoV-2
Incidence, risk factors, and outcomes of hospital-acquired infections with common respiratory viruses
Joshua Petrie; Riley Moore; Adam Lauring and Keith Kaye

Background: We estimated the incidence of hospital-acquired respiratory virus infections (HARVIs) by viral species, and we identified risk factors for and outcomes of HARVIs. **Methods:** We identified a cohort of all inpatient admissions of ≥24 hours duration to University of Michigan hospitals during 3 study years (2017–2018, 2018–2019, and 2019–2020). HARVIs were defined as initial respiratory virus detection (adenovirus, coronaviruses, human metapneumovirus, influenza A and B, parainfluenza viruses, respiratory syncytial virus, or rhinovirus-enterovirus) in a clinical test ordered after the 95th percentile of the virus-specific incubation period. Incidence was calculated as the number of HARVIs per 10,000 patient admission days. Patient demographic and clinical characteristics were assessed as risk factors for HARVI in Cox proportional hazards models of the competing outcomes of HARVIs and hospital discharge. The association between time-varying HARVI status and the competing outcomes of discharge and in-hospital death was estimated in covariate-adjusted Cox-proportional hazards models. All analyses were performed separately for adult patients (aged ≥18 years) and pediatric patients (aged <18 years). **Results:** The overall incidences of HARVI were 8.5 and 3.0 per 10,000 admission days for pediatric and adult patients, respectively. Rhinovirus was the most common HARVI in both pediatric and adult patients, with incidences of 5.1 and 1.1 infections per 10,000 admission days, respectively. With the exception of influenza A, the incidence of HARVI was higher in pediatric patients than adult patients for all viral species. For adults, congestive heart failure, renal disease, and cancer all increased HARVI risk independent of their associations with extended hospital stays. Risk of HARVI was also elevated for patients admitted September through June relative to July admissions. For pediatric patients, chronic cardiovascular and respiratory conditions, cancer, medical-device dependence, and December admission increased risk of HARVI. Age, sex, and race were not associated with risk of HARVI for children or adults. Inpatient lengths of stay were longer for adults with HARVI compared to those without (range of virus-specific hazard ratios, 0.48– 0.77). However, estimated effects were not statistically significant for human metapneumovirus, parainfluenza, or adenovirus. Only influenza A was associated with an increased risk of in-hospital death within 30 days of infection for adults. No HARVIs were associated with increased length of stay or risk of death for pediatric patients. **Conclusions:** The incidence of HARVI varied by viral species and was higher among pediatric patients. HARVIs increased the length of hospital stays for adults but not for pediatric patients.
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s97
doi:10.1017/ash.2023.367

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: SSI
Quality improvement approach for surgical-site infection prevention in a Philippine provincial hospital
Anthony Abustan; Unarose Hogan; Julie Winn; Paul Pagaran; Joan Littlefield and Ted Miles