

Variable	Medical Control (n=2075)	Medical Intervention (n=2709)	Significance	Surgical Control (n=2088)	Surgical Intervention (n=1837)	Significance
Age (years)	60.9 (17.6)	62.0 (17.7)	p=0.03	62.6 (16.3)	64.9 (13)	p<0.001
LOS (days)	5.5 (6.7)	5.4 (6.5)	p=0.43	5.3 (5.5)	7.4 (6.9)	p<0.001
Gender						
Female	983 (47.4%)	1357 (50.1%)	p=0.74	965 (46.2%)	682 (37.1%)	p=0.46
Male	1092 (52.6%)	1352 (49.9%)		1123 (53.8%)	1155 (62.9%)	
Race*						
Caucasian	969 (46.7%)	1237 (45.7%)	p=0.21	1047 (50.1%)	1185 (64.5%)	p<0.001
Asian	668 (32.2%)	854 (31.5%)		565 (27.1%)	224 (12.2%)	
Black or African American	18 (0.9%)	37 (1.4%)		21 (1%)	19 (1%)	
Other	391 (18.8%)	542 (20%)		422 (20.2%)	377 (20.5%)	

\*Race includes missing data

NVHAP incidence

	Medical/1000 patient days	Surgical/1000 patient days
Control	1.41	1.18
Intervention	0.21	0.52
% Reduction	85%	56%

NVHAP secondary outcomes

	Sepsis	Mortality	30-day Readmission	ICU Transfer
	n (%)	n (%)	n (%)	n (%)
Yes	8 (20%)	2 (5%)	5 (13%)	10 (26%)
No	31 (79%)	37 (95%)	34 (87%)	29 (74%)
	Hospital day of NVHAP onset			Total
Study Unit	Mean (SD)	Median	NVHAP Cases	
Medical Control	8 (6)	6	16	
Medical Intervention	5 (1)	5	3	
Surgical Control	6 (2)	5	7	
Surgical Intervention	11 (5)	12	13	

**Conclusion:** These findings add to the growing body of evidence that oral care as primary source control is likely to have a role in NVHAP prevention.

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**94. Clinical Correlates of Cdc's Hospital-onset Adult Sepsis Event Surveillance Definition and Association with Reportable Healthcare-associated Infections**  
Brady Page, MD, MPH&TM<sup>1</sup>; Michael Klompas, MD, MPH<sup>2</sup>; Christina Chan, MPH<sup>3</sup>; Michael Filbin, MD<sup>4</sup>; Sayon Dutta, MD, MPH<sup>1</sup>; Dustin McEvoy, BS<sup>5</sup>; Chanu Rhee, MD, MPH<sup>2</sup>; <sup>1</sup>Massachusetts General Hospital, Boston, Massachusetts; <sup>2</sup>Harvard Medical School and Harvard Pilgrim Health Care Institute, Boston, Massachusetts; <sup>3</sup>Harvard Pilgrim Health Care Institute, Boston, Massachusetts; <sup>4</sup>Partners Healthcare, Boston, Massachusetts; <sup>5</sup>Harvard Medical School, Boston, Massachusetts

**Session:** O-18. HAI Epidemiology and Prevention

**Background:** Hospital-onset (HO) sepsis is associated with substantial mortality but is not tracked or reported by most hospitals. CDC's Adult Sepsis Event (ASE) definition may facilitate standardized surveillance but little is known about the clinical correlates of HO-ASEs and their association with currently reportable healthcare-associated infections (HAIs).

**Methods:** In this retrospective study of all adult patients admitted to an academic medical center between June 2015–2018, we assessed the overlap between HO-ASEs and HAIs reported to the National Healthcare Safety Network (NHSN) and reviewed a random subset of 110 HO-ASE cases to determine their clinical correlates.

**Results:** The cohort included 168,249 hospitalized patients, including 2,139 (1.3%) with HO-ASE and 2,133 (1.3%) with NHSN HAIs. Amongst the 2,139 HO-ASE patients, 480 (22.4%) had ≥1 HAI: 8.1% VAE, 6.2% CLABSI, 6.1% C.difficile, 3.1% CAUTI, 1.3% MRSA bacteremia, and 0.8% SSI. HO-ASE was associated with higher in-hospital mortality rates than HAIs (28.6% vs 14.6%, p<0.001). HO-ASE associated mortality was high even when NHSN-reportable HAIs were absent (26.5%) whereas NHSN-reportable HAI mortality was relatively low when HO-ASE was absent (8.4%). Amongst the 110 reviewed HO-ASE cases, 102 (93%) were possible or confirmed infections, most commonly pneumonia (39%, of which 35% were ventilator-associated), non-C.difficile intra-abdominal infections (15%), febrile neutropenia (14%), urinary tract infection (7%, of which 88% were catheter-associated), and skin/soft tissue infection (7%). Most (86%) infections flagged by HO-ASEs were acquired in the

hospital rather than the community. The most common non-infectious events flagged by HO-ASE were pulmonary edema and periprocedural blood loss associated with blood cultures and empiric antibiotics.

**Conclusion:** CDC's hospital-onset ASE definition accurately identifies patients with nosocomial sepsis who have very high mortality rates and are generally not captured by currently reportable HAI metrics. Routine hospital-onset ASE surveillance could provide a broader window into serious nosocomial infections, identify new targets for prevention, and further improve outcomes for hospitalized patients.

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### 95. CAUTI and CLABSI in Hospitalized COVID-19 Patients

Bryan C. Knepper, MPH, MS<sup>1</sup>; Kristin Wallace, MPH<sup>1</sup>; Heather Young, MD<sup>1</sup>; <sup>1</sup>Denver Health Medical Center, Denver, Colorado

**Session:** O-18. HAI Epidemiology and Prevention

**Background:** Patients hospitalized for suspected or confirmed COVID-19 often require high levels of support, including supplemental oxygen or ventilation, intravenous fluids and pressors, prone positioning, and strict input/output monitoring. Increased utilization of invasive devices such as indwelling urinary catheters and central venous catheters may be needed in this population. Staff minimize contact time with COVID-19 patients. We hypothesized higher rates of device infection in patients with COVID-19.

Table 1

	COVID Positive Units	COVID Negative Units
Patient Days	2714	9479
Foley Catheter Days	1388	1220
Indwelling Urinary Catheter Utilization	51%	13%
CAUTI	7	1
CAUTI/1000 Device Days	4.323	1.639
CVC Days	1178	1131
CVC Utilization	43%	12%
CLABSI	3	1
CLABSI/1000 Device Days	1.698	1.768
Urine Cultures Ordered	155	169
Urine Cultures Ordered /1000 Patient Days	57.1	17.8
Blood Cultures Ordered	452	421
Blood Cultures Ordered /1000 Patient Days	166.5	44.7

**Methods:** This is a retrospective cohort study at a 555-bed safety net hospital. 4 units (125 beds) primarily cared for patients with confirmed infection. Other units did not accept patients until COVID status was deemed negative, except Labor & Delivery and a designated mixed unit. Indwelling urinary catheter and central venous catheter (CVC) device days are tracked in all inpatient areas. CLABSI and CAUTI surveillance is performed using NHSN definitions. The first hospitalized COVID-19 case at our hospital occurred late March 2020. April - May 2020 was considered the initial pandemic phase for our institution. Device utilization for the 6 months prior (October 2019 - March 2020) was compared to initial pandemic phase. Device infection rates were also compared. Within the initial pandemic phase, utilization and infection rates were stratified by COVID-19 vs non-COVID-19 areas.

**Results:** Median indwelling urinary catheter usage increased during the initial pandemic period by 36% (998 to 1355 catheter days, p=0.13). CVC usage increased 25% (997 to 1246 CVC days, p=0.13). Hospital-wide, median CAUTI rates remained constant (2.9 and 2.7 infections/1000 catheter days, p=1.00). CLABSI rates increased significantly (0.0 and 1.6 infections/1000 CVC days, p=0.008). CAUTI rates were 83% higher, and CLABSI rates were 65% higher in COVID-19 areas compared to non-COVID-19 areas (Table 1). Urine culture and blood culture ordering were 69% higher and 73% higher in COVID-19 areas, respectively.

**Conclusion:** Utilization of both indwelling urinary catheters and CVC increased during the initial phase of the pandemic. Hospitalized COVID-19 patients appear to be at higher risk of both CAUTI and CLABSI. Patient care protocols, device utilization and culture ordering all require further investigation.

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### 96. Surgical Site Infection Prophylaxis Selection and Postoperative Clinical Outcomes in Patients with Reported Penicillin Allergy

Ryan K. Dare, MD, MS<sup>1</sup>; <sup>1</sup>University of Arkansas for Medical Sciences, Little Rock, Arkansas

**Session:** O-19. HAI Prevention: SSIs, Disinfection, and Hand Hygiene

**Background:** Administration of preoperative antibiotics are known decrease risk of postoperative surgical site infections (SSI) and deviation from first line prophylaxis increases this risk. Patients who report penicillin (PCN) allergy are less likely to receive cefazolin preoperatively despite being the preferred antibiotic for SSI prevention in the majority of surgical procedures.

**Methods:** A single center retrospective descriptive study was performed during the 2018–2019 academic year. Perioperative antimicrobial administration practice was evaluated for all types of surgical procedures. Patient demographics, PCN allergy history, development of *Clostridioides difficile* infection (CDI) within 90 days of procedure, and total hip and knee arthroplasty SSIs were assessed.