

Cross-cutting Issues:	Definition:
Documentation Missing or Unclear	Documentation, written or electronic, is either missing or unclear (e.g., inadequate or performed improperly).
Staffing Shortages	Staffing level, of any type of healthcare worker, is insufficient for adequate patient care or routine IPC tasks.
Competency Concerns	Concern that healthcare worker lacks adequate training, knowledge, or skills for routine IPC tasks (e.g., concerns about new staff and/or protocols specific to Emory Healthcare).
Care Refusal	A task either did not occur or did not occur properly because the patient or their family was unengaged or refused care.
Task Not Performed	Task was not performed (e.g., missed) or done incorrectly for reasons not otherwise specified.
Communication Breakdown during Care Transitions or Between Teams	During care transitions (e.g., handoff, bedside shift report, or transfer in patient location) or between teams, communication about IPC tasks was absent, incomplete, inconsistent, or unclear.
Inadequate Supplies	Supplies for IPC tasks were not adequate (e.g., supplies not functioning appropriately or being incompatible with a patient's anatomy/condition).
Supplies Unavailable	Supplies for IPC tasks were not available.
Patient's Medical Condition(s) Compromises Care	Patient's medical condition (e.g., high acuity, emergency situation, COVID-19) or characteristic (e.g., anatomy/facial features) contributed to tasks being missed or performed improperly, or made them more susceptible to adverse outcomes.
Limited Patient Care Space	Patient care areas impede workflow because they are small, cramped, or crowded.
Policies Missing or Unclear	Work policies and procedures are missing, unknown, or ambiguous.
CLABSI Critical Tasks:	Definition:
Line Blood Draw Technique	Any process that involves drawing blood from a central line (e.g., blood cultures, routine labs).
Call to Order	Refers to the standard process of pausing before central line insertion.
Bathing	Any reference to bathing patients (e.g., includes CHG bathing).
Line Caps	Missing or inconsistent use of line caps.
Dressing Maintenance	Includes integrity of dressing, missing dressing changes, dating of dressings, Biopatch placement, or other tasks related to the central line dressing.
Line Insertion	Process of inserting a central line (after Call to Order), which includes adherence to the Central Line Insertion Practices (CLIP) bundle.
Assessing Line Indication/Necessity	Refers to the reason(s) for why central line was placed or the ongoing necessity for the central line.
Maintaining Line Patency	Refers to any process that keeps line free of obstruction, including the use of clotting medications (e.g., tPA/alteplase) or flushing.
Environmental Cleaning	Refers to concerns about the cleanliness of surfaces in the healthcare environment around the patient (e.g., high touch surfaces not being wiped down, general cleanliness of room, terminal cleaning, and other concerns for contamination of the healthcare environment).
CAUTI Critical Tasks:	Definition:
Assessing indication and necessity of an indwelling urinary catheter	Routinely performing the process of determining, documenting, or communicating the ongoing need for an indwelling urinary catheter. This includes, but is not limited to, assessing urinary retention as well as determining whether an external urinary catheter could be used.
Inserting or exchanging an indwelling urinary catheter	All processes involved in inserting or exchanging an indwelling urinary catheter (including specialty catheters). This includes the provider placing the order, the procedural steps, and documenting the process.
Catheter care	All processes involved in either catheter or perineal care.
Use of bowel management system	Understanding the indications for or appropriately using any type of bowel management system.
Assessing the need for a urine culture	Understanding when a urine culture is needed to assess for infection.
Obtaining a urine culture	All processes involved in obtaining a urine culture, including having an order or following recommended techniques for obtaining urine culture (e.g., including exchanging the catheter prior to culturing, if needed).
Environmental cleaning	All processes involved in cleaning all patient care areas.

Figure 2: Novel Analysis Framework. Mutually identified cross-cutting issues and CLABSI/CAUTI critical tasks with definition. Abbreviations: CHG, chlorhexidine gluconate; tPA, tissue plasminogen activator

Figure 3: Classification of all identified CLABSI contributing factors using a novel framework assessing critical tasks and cross-cutting issues												
	Critical Tasks (n, column %)											
	Bathing	Dressing Maintenance	Assessing Line Indication	Maintaining Line Patency	Line Insertion	Call to Order	Line Blood Draw Technique	Line Caps	Environ Cleaning	Other	Total (%)	
Staffing Shortages	16 (12%)	14 (13%)	8 (5%)	2 (4%)	0 (0%)	2 (5%)	0 (0%)	0 (0%)	2 (22%)	68 (27%)	112 (15%)	
Task Not Performed	28 (20%)	17 (15%)	6 (11%)	11 (23%)	6 (14%)	25 (60%)	0 (0%)	3 (33%)	6 (2%)	105 (14%)		
Documentation Missing or Unclear	25 (18%)	17 (15%)	13 (24%)	4 (8%)	6 (14%)	5 (12%)	0 (0%)	3 (33%)	0 (0%)	22 (9%)	95 (13%)	
Communication Breakdown during Transitions or Between Teams	20 (14%)	11 (10%)	18 (33%)	10 (21%)	4 (9%)	2 (5%)	3 (14%)	1 (11%)	2 (22%)	19 (7%)	90 (12%)	
Competency Concerns	10 (7%)	17 (15%)	0 (0%)	9 (19%)	8 (19%)	4 (10%)	9 (43%)	0 (0%)	0 (0%)	27 (11%)	84 (11%)	
Patient's Medical Condition(s) Compromises Care	9 (7%)	14 (13%)	3 (5%)	0 (0%)	6 (14%)	1 (2%)	1 (5%)	0 (0%)	1 (11%)	40 (16%)	75 (10%)	
Care Refusal	20 (14%)	2 (2%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (4%)	32 (4%)	
Policies Missing or Unclear	3 (2%)	3 (3%)	1 (2%)	2 (4%)	0 (0%)	1 (2%)	4 (19%)	0 (0%)	0 (0%)	6 (2%)	20 (3%)	
Inadequate Supplies	0 (0%)	7 (6%)	1 (2%)	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (1%)	12 (2%)	
Supplies Unavailable	1 (1%)	1 (1%)	0 (0%)	1 (2%)	2 (5%)	0 (0%)	0 (0%)	1 (11%)	0 (0%)	5 (2%)	11 (2%)	
Limited Patient Care Space	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (3%)	10 (1%)	
Other	6 (4%)	8 (7%)	4 (7%)	9 (19%)	8 (19%)	2 (5%)	4 (19%)	1 (11%)	1 (11%)	42 (16%)	85 (12%)	
Total (n, row %)	138 (19%)	111 (15%)	56 (8%)	48 (7%)	43 (6%)	42 (6%)	21 (3%)	9 (1%)	9 (1%)	255 (35%)	731 (100%) ¹	
1. Each contributing factor (or "card") could be classified as referring to more than one critical task or cross-cutting issue so this adds up to more than the total number of reported 602 contributing factors												
Abbreviations: Environ, environmental												

associated factors, such as communication difficulties when assessing device indications.

Disclosure: Colleen Kraft: Consultant - REbiotix/Ferring; Scientific Advisory Board - Seres, LLC

Antimicrobial Stewardship & Healthcare Epidemiology 2024;4(Suppl. S1):s138–s139

doi:10.1017/ash.2024.309

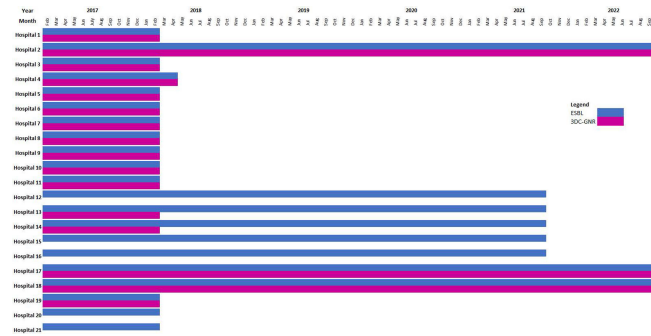
Figure 4: Classification of all identified CAUTI contributing factors using a novel framework assessing critical tasks and cross-cutting issues

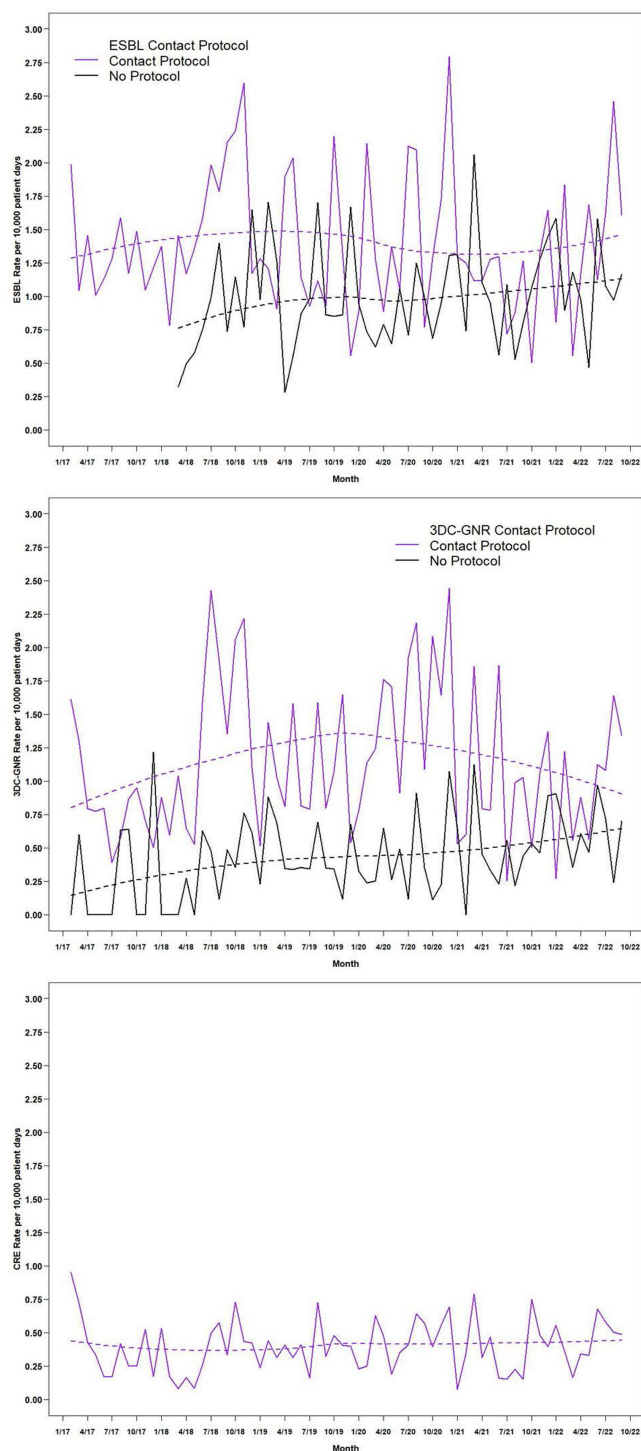
	Critical Tasks (n, column %) ¹										Total (%)
	Catheter care	Assessing Indication/Necessity of an indwelling urinary catheter	Inserting or exchanging an indwelling urinary catheter	Use of bowel management system	Assessing need for a urine culture	Obtaining a urine culture	Other				
Documentation Missing or Unclear	52 (38%)	34 (25%)	13 (27%)	1 (4%)	1 (6%)	0 (0%)	7 (4%)			108 (20%)	
Staffing Shortages	13 (10%)	8 (7%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	58 (35%)			80 (15%)	
Competency Concerns	17 (13%)	19 (16%)	12 (25%)	13 (50%)	7 (39%)	6 (33%)	8 (5%)			82 (15%)	
Care Refusal	1 (1%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (1%)			4 (1%)	
Task Not Performed	22 (16%)	15 (13%)	5 (10%)	4 (15%)	4 (22%)	4 (22%)	7 (4%)			61 (12%)	
Communication Breakdown during Care Transitions or Between Teams	10 (7%)	23 (19%)	4 (8%)	2 (8%)	2 (11%)	0 (0%)	15 (9%)			56 (11%)	
Inadequate Supplies	0 (0%)	0 (0%)	2 (4%)	0 (0%)	0 (0%)	0 (0%)	7 (4%)			9 (2%)	
Supplies Unavailable	0 (0%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)			2 (0.4%)	
Patient's Medical Condition(s) Compromises Care	10 (7%)	3 (3%)	4 (8%)	0 (0%)	0 (0%)	0 (0%)	8 (5%)			25 (5%)	
Limited Patient Care Space	0 (0%)	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	3 (2%)			4 (1%)	
Policies Missing or Unclear	2 (1%)	1 (1%)	2 (4%)	0 (0%)	3 (17%)	1 (6%)	2 (1%)			11 (2%)	
Other	9 (7%)	14 (12%)	4 (8%)	6 (23%)	1 (6%)	7 (39%)	48 (29%)			89 (17%)	
Total (n, row %)	136 (26%)	119 (22%)	48 (9%)	26 (5%)	18 (3%)	16 (3%)	166 (31%)			530 (100%) ²	

1. Environmental cleaning was dropped as a critical task as it was only identified in one CAUTI contributing factor and this was reclassified as other
2. Each contributing factor (or "card") could be classified as referring to more than one critical task or cross-cutting issue so this adds up to more than the total number of reported contributing factors

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Quality Improvement
Impact of Discontinuing Contact Precautions for Multidrug-resistant Gram-negative Enterobacteriaceae in a Large Health System
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Justin Ludwig, UPMC; Christine Bridge, UPMC; Elise Martin, VA Pittsburgh Healthcare System and Graham Snyder, UPMC, University of Pittsburgh

Background: Contact precautions (CP) to prevent transmission of multi-drug-resistant gram-negative (MDRGN) Enterobacteriaceae are recommended, although studies of discontinuation of CP (DcCP) have found no change in healthcare associated infections (HAI) due to extended-spectrum beta-lactamase (ESBL) producing Enterobacteriaceae. Limited data exists on DcCP for MDRGN in a large health system. **Methods:** We performed a retrospective observational study analyzing the relationship between use of CP and HAI due to two definitions of MDRGN Enterobacteriaceae: ESBL, and non-susceptibility to ≥3 drug classes (3DC-GNR), with carbapenem resistant Enterobacteriaceae (CRE) serving as control. The study included all inpatient admissions from 2/2017 through 9/2022 at 21 acute care hospitals. Hospitals had latitude to determine CP practices based on local risk assessment, but in 2/2018, system-wide transmission-based precautions guidance was updated to recommend DcCP for MDRGN Enterobacteriaceae and in 12/2019 was updated to clarify DcCP specifically for ESBL and 3DC-GNR while continuing CP





for carbapenem-resistant organism carriage. We interviewed infection preventionists to define when CP were used for CRE, ESBL, and 3DC-GNR Enterobacteriaceae. HAI were defined using National Healthcare Safety Network criteria including all HAI categories. We compared the incidence rate of HAI attributable to the two MDRGN types in hospital months with and without use of CP, with HAI due to CRE as a comparison group since all hospitals used CP for CRE throughout the study period. **Results:** The periods of CP use, by hospital, are shown in Figure 1. Throughout the study

period, there were 987 HAI attributed to ESBL Enterobacteriaceae, 579 due to 3DC-GNR Enterobacteriaceae, and 329 due to CRE. Figure 2 shows the unadjusted aggregate rate of HAI for each of the three MDRGN types, including among hospitals with and without CP in each month, for ESBL and 3DC-GNR. In months with and without CP, the rate of HAI was 1.482/10,000 and 1.093/10,000 patient days (incidence rate ratio [IRR], 1.356 [95% confidence interval, 1.195-1.540]) for ESBL Enterobacteriaceae. In months with and without CP, the rate of HAI was 1.071/10,000 and 0.493/10,000 patient days (IRR, 2.173 [95% confidence interval, 1.838-2.569]) for 3DC-GNR Enterobacteriaceae. **Conclusion:** DcCP was not associated with an increase in HAI due to ESBL and 3DC-GNR Enterobacteriaceae in aggregated facilities that self-selected for DcCP. Facilities that used CP were associated with significantly higher rates of ESBL and 3DC-GNR Enterobacteriaceae, a relationship that did not change as hospitals DcCP for these MDRGN. Further analyses are necessary to assess for a causal relationship.

Antimicrobial Stewardship & Healthcare Epidemiology 2024;4(Suppl. S1):s139-s140

doi:10.1017/ash.2024.310

Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: Quality Improvement

Antimicrobial bathing of the critically ill for the prevention of health-care-associated infection at a hospital in California

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Background: Patients in the intensive care unit (ICU) have invasive lines increasing their risk for healthcare-associated infections (HAIs). Our objective was to determine if antimicrobial bathing with 2% chlorhexidine gluconate (CHG) compared to the colloidal silver-based antimicrobial product would reduce the incidents of central line-associated bloodstream infections (CLABSI) and catheter-associated urinary tract infections (CAUTI). **Methods:** We performed a before-and-after study in four adult ICUs at a two-hospital facility in California. Prospective surveillance of CLABSI and CAUTI prevention bundles monitoring was established. The intervention consisted of daily bathing with CHG for all patients in the ICUs. A baseline period of one year was followed by an intervention period of one year. The incidence rates of CLABSIs and CAUTIs were compared between the baseline and intervention periods utilizing a t-test analysis. **Results:** A total of 10103 patients were included. At Facility A, a mean CLABSI rate of 2.43/1000 central line catheter days (CL) with 2149 patient days (Mean differences 95% CI -0.5-3.1; $P>0.0975$), during the baseline period followed by 1.11/1000 CL days with 2193 patient days in the intervention period. At Facility B, the mean CLABSI rate of 1.82/1000 CL days with 2976 patient days (Mean differences 95% CI -0.6-2.31; $P>0.161$) during the baseline period was followed by 1.01/1000 CL days with 2785 patient days in the intervention period. At Facility A, the mean CAUTI rate of 1.37/1000 indwelling catheter days (IUC) with 2149 ICU patient days (Mean difference 95% CI is 0.28-1.97; $P=0.2160$) was noted in the baseline period, followed by 0.45/1000 IUC days with 2785 in the intervention period. **Conclusion:** Daily bathing with CHG significantly reduced the incidence of CAUTI at Facility A. It is unclear why Facility A saw a statistically significant reduction in CAUTI, but Facility B did not. The difference in outcomes may be related to hospital size, service lines, supply constraints, and discrepancies in staffing. CHG bathing was not directly associated with a reduced risk of CLABSI at Facility A and B during our limited study, but it was encouraging enough that our organization will continue this intervention to obtain additional data to determine if bathing with CHG will reduce CLABSI and CAUTI.

Antimicrobial Stewardship & Healthcare Epidemiology 2024;4(Suppl. S1):s140

doi:10.1017/ash.2024.311