1185. Impact of Utilizing Drug Resistance in Pneumonia (DRIP) Score on Management of Pneumonia

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Background. Pneumonia is a leading cause of infection-related admissions and death. It is imperative that appropriate antibiotic therapy is selected. Traditional scoring systems for identifying at-risk persons for drug-resistant pathogens– i.e., Healthcare-associated pneumonia (HCAP), have been inaccurate and often lead to inappropriate antibiotic selection. A novel pneumonia scoring system –"Drug Resistance in Pneumonia (DRIP)" was implemented at the Detroit Medical Center (DMC) in January 2018. The objective of this study was to evaluate the effectiveness of the DRIP score in reducing the use of broad-spectrum antibiotics and the impact on key outcomes in patients treated for pneumonia.

Methods. A retrospective chart review of 89 patients admitted to the DMC for treatment of pneumonia was conducted—45 patients prior to and 44 patients post-implementation of the DRIP score. Basic demographics, signs and symptoms, antibiotics data, pneumonia severity score (CURB – 65), Charlson co-morbidity score, and outcome measures were compared. DRIP scores and HCAP risk factors were calculated for all patients. The definitions of broad-spectrum antibiotics (BSA) were consistent with DMC guidelines for the treatment of pneumonia (antibiotics targeting nosocomial Gram-negative organisms and/or methicillin-resistant *Staphylococcus aureus).*

Results. Demographics are shown in Table 1. 18 (40%) of the pre-implementation cohort had risk factors for resistance (HCAP risk factors) compared with 14 (32%) in the post. Conversely, 15 (33%) of the pre-implementation cohort had risk factors for resistance (DRIP ≥4) compared with 8 (18%) in the post-implementation period (Table 2). A difference in BSA prescribing was seen in patients previously characterized as having a high risk of resistance (HCAP) but with DRIP score <4 [5/7 (72%) vs.1/7 (16%) (Table 2)]. BSA use was 24 (53%) in the pre-implementation cohort and 12 (27%) in post-implementation cohort, $P = 0.03$. Durations of antibiotics were 8.3 days vs. 9.8 days respectively, $P = 0.04$. Readmission with pneumonia at 30 days was 3 (7.5%) for both groups.

Conclusion. The implementation of a novel DRIP scoring system resulted in improved prescribing patterns and a significant reduction of broad-spectrum antibiotics by 26% as compared with traditional HCAP score.

Table 1: Baseline Demographics

	Pre-DRIP		Post-DRIP	
	CAP (n = 27)	HCAP (n = 18)	DRIP < 4 (n = 36)	DRIP ≥ 4 (n = 8)
Age (range), yrs	20 - 72	45 - 92	20 - 81	45 - 92
Mean	55	67	57	70
Median	61	66	61	73
Gender, no.				
Male	14	11	28	5
Female	11	7	8	3
Race, no.				
White	7	4	7	0
African American	14	13	27	4
Other	4	1	0	4
Intensive Care Unit, no.	6	7	2	1
Require BiPAP, no.	4	1	2	0
Require Ventilator, no.	5	4	1	1
CURB, no.				
0 – 1	16	10	23	3
2	5	2	7	3
≥ 3	6	6	6	2
Chronic Lung Disease, no	4	6	15	5
Charlson Comorbidity Index, no.				
0 - 6	25	14	34	5
7 - 12	1	4	2	3

Table 2 Drug Resistance Risk Factors and Spectrum of Antimicrobial Use

Pre-DRIP Cohort n=45[1]					Post-DRIP Cohort n=44[2]				
DRIP Score n (%)	HCAP Risk Factors	n (%)	Spectrum of Empiric Antibiotics	n (%)	DRIP Score n (%)	HCAP Risk Factors	n (%)	Spectrum of Empiric Antibiotics	n (%)
DRIP < 4 30	1 or More	7 (20)	Narrow	2 (4.4)	DRIP <4 36 (81.8)	1 or More	7 (15.9)	Narrow	6 (13.6)
			Broad	5 (11.1)				Broad	1 (2.3)
	None	23 (51.1)	Narrow	18 (40)		None	29 (65.9)	Narrow	24 (54.5)
			Broad	5 (11.1)				Broad	5 (11.4)
DRIP ≥ 4 15	1 or More	11 (24.4)	Narrow	0 (0)	DRIP ≥ 4 8 (18)	1 or More	7 (15.9)	Narrow	1 (2.3)
			Broad	11 (24.4)				Broad	6 (13.6)
	None	4 (8.9)	Narrow	2 (4.4)		None	1 (2.3)	Narrow	1 ((2.3)
			Broad	2 (4.4)				Broad	0 (0)

[1]Pre-DRIP Cohort = patients evaluated and treated using Healthcare Associated Pneumonia (HCAP) definitions
[2]Post-DRIP Cohort = patients evaluated and treated using the Drug Resistance in Pneumonia Definitions

Disclosures. **All authors:** No reported disclosures.

1186. Decreased Laboratory-Identified *Clostridioides difficile* Infections with Implementation of an Electronic Hand Hygiene Monitoring System in a Long-Term Acute Care Hospital Decreased Laboratory-Identified *Clostridioides difficile* Infections with Implementation of an Electronic Hand Hygiene Monitoring System in a Long-Term Acute Care Hospital

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Background. Hand hygiene (HH) is the cornerstone of infection prevention and improved compliance has been associated with reduced healthcare-associated infections (HAIs). However, traditional methods for HH data collection have limitations and may not accurately reflect true compliance. We sought to evaluate whether an electronic hand hygiene monitoring system (HHMS) can improve data collection, compliance, and reduce HAIs.

Methods. A HHMS was implemented as part of a pilot at a single facility in June 2018 for all healthcare workers (HCWs) who entered patient rooms. The system prompted HCWs to perform HH with an audible and visual reminder emitted from a badge if a HH event had not been registered within specific timeframes of entering or exiting a patient room. The system captured compliance with preferential handwashing (soap and water) for at least 15 seconds upon exit of *Clostridioides difficile* (*C. difficile*) designated rooms. All HH data were collected by the HHMS. Hand hygiene compliance and HAI data were compared for the pre-intervention (June 2017-May 2018) and intervention periods (July 2018-March 2019). No changes were made to environmental cleaning protocols or compliance monitoring, nor in antibiotic stewardship practices.

Results. HH compliance by direct observation in the pre-intervention period was 91% (1,612 observations). HH compliance with the HHMS during the intervention period was 97% (2,778,402 observations). The mean monthly HH opportunities recorded during the pre-intervention period was 134, while the HHMS captured 308,711, a greater than 2,300-fold increase. The incidence of healthcare facility-onset *C. difficile* infections (HO-CDI) pre-intervention was 9.60 per 10,000 patient-days (41 GDH+/Toxin+ laboratory-identified [labID] events/42,726 patient-days). With the HHMS, HO-CDI decreased 70% ($P = 0.0003$) to 2.89 per 10,000 patient-days (9 labID events/31,169 patient-days). No policy changes in environmental cleaning of high-touch surfaces were made or observed during the pilot.

Conclusion. The use of an HHMS facilitated more comprehensive HH data and improved compliance. The preliminary findings also support an association between more robust HH compliance data and a significant decrease in toxin-producing CDI.

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1187. Estimation of Individual Healthcare Workers' Relative Hand Hygiene Compliance Using an Anonymous Electronic Monitoring System

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Background. The current hand hygiene (HH) auditing and feedback strategy include anonymized data collection using direct observation and feedback of aggregated data. We aimed to evaluate whether an anonymous (without wearable device) HH electronic monitoring system (EMS) could detect patterns associated with individual healthcare workers (HCWs) and estimate their relative HH performance.