Presentation Type:
Poster Presentation
Association Between Federal Value-Based Incentive Program Implementation and Hospital-Onset *C. difficile* Infection Rates
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Background: The Hospital-Acquired Conditions Reduction Program (HACRP) and Hospital Value-Based Purchasing (HVBP) are federal value-based incentive programs that financially reward or penalize hospitals based on quality metrics. Hospital-onset *C. difficile* infection (HO-CDI) rates reported to the CDC NHSN became a target quality metric for both HACRP and HVBP in October 2016, but the impact of these programs on HO-CDI rates is unknown. **Methods:** We used an interrupted time-series design to examine the association between HACRP/HVBP implementation in October 2016 and quarterly rates of HO-CDI per 10,000 patient days among incentive-eligible acute-care hospitals conducting facility-wide HO-CDI NHSN surveillance between January 2013 and March 2019. Generalized estimating equations were used to fit negative binomial regression models to assess for immediate program impact (ie, level change) and changes in the slope of HO-CDI rates, controlling for each hospital's predominant method for CDI testing (nucleic acid amplification including PCR (NAAT), enzyme immunoassay for toxin (EIA), or other testing method including cell cytotoxicity neutralization assay and toxigenic culture). **Results:** Of the 265 study hospitals studied, most were medium-sized (100–399 beds, 55%), not-for-profit (77%), teaching hospitals (70%), and were located in a metropolitan area (87%). Compared to EIA, rates of HO-CDI were higher when detected by NAAT (incidence rate ratio [IRR], 1.55; 95% CI, 1.41–1.70) or other testing methods (IRR, 1.47; 95% CI, 1.26–1.71). Controlling for CDI testing methods, HACRP/HVBP implementation was associated with an immediate 6% decline in HO-CDI rates (IRR, 0.94; 95% CI, 0.89–0.99) and a 4% decline in slope per year-quarter thereafter (IRR, 0.96; 95% CI, 0.95–0.97) (Fig. 1). **Conclusions:** HACRP/

HVBP implementation was associated with both immediate and gradual improvements in HO-CDI rates, independent of CDI testing methods of differing sensitivity. Future research may evaluate the precise mechanisms underlying this improvement and if this impact is sustained in the long term.
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Presentation Type:
Poster Presentation
Association Between Infection Control Resource Use and the Number of Penalties Under Medicare's Hospital-Acquired Condition Reduction Program
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Background: The Hospital-Acquired Condition Reduction Program (HACRP) is a pay-for-performance Medicare program that promotes reducing patient harm, particularly healthcare-associated infections (HAIs). We examined the association between infection-control–related activities and the number of penalties a hospital received between fiscal years 2015 and 2018. **Methods:** We used logistic regression with ordered categories to assess infection control resource use and the number of penalties, an ordered categorical dependent variable with 5 categories ranging from 0 to 4, as of 2018. Data sources included National Healthcare Safety Network, American Hospital Association Annual Survey, Medicare Impact and Cost Report files, and Data.Medicare.gov. We excluded hospitals lacking data to calculate any HACRP score or component score for HAI and hospitals missing observations for model variables (301 hospitals). We assessed the following model variables: teaching hospital status, infection preventionists (IP) per 1,000 beds, surveillance hours per week per bed, other infection control activities per week per bed, nurse-to-bed ratio, housekeeping expenditure per 10,000 beds, nursing position vacancies per bed, bed size, electronic health
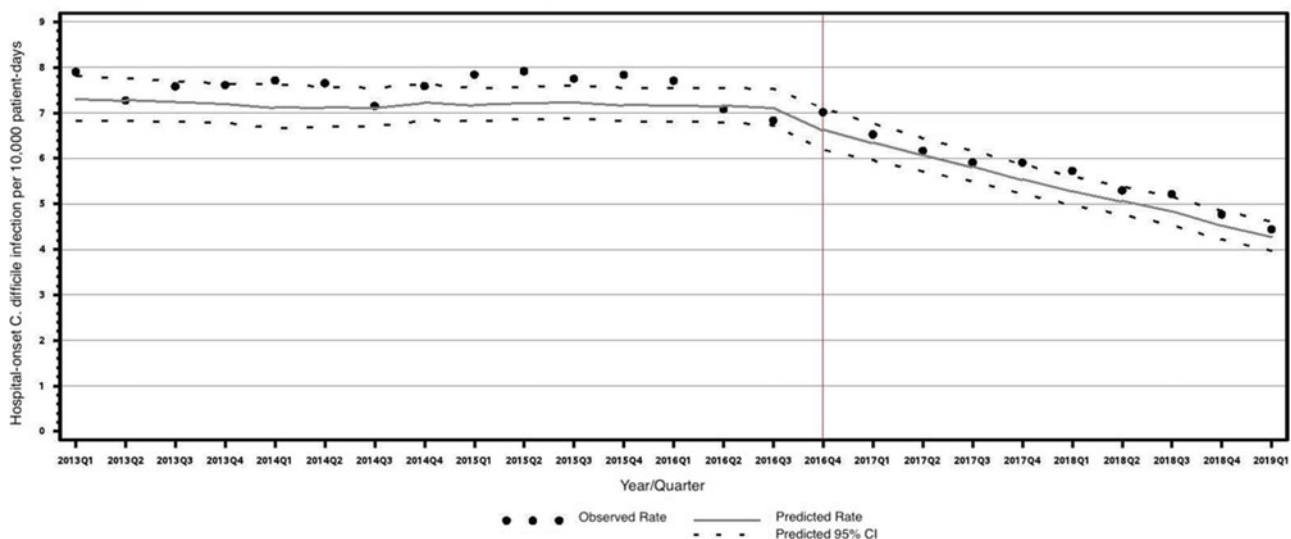

Figure1: Association of HACRP/HVBP implementation with observed and predicted HO-CDI rates over time.

Fig. 1.

Table 1.

Table. Association Between Hospital Characteristics and Number of Times Penalized by the HACRP

	Logit Model Point Estimates	OR (95% CI)	P value
Teaching Status Y vs N	0.1502	1.16 (0.99-1.37)	0.0756
IP per 1,000 beds	-0.0106	0.99 (0.98-1.00)	0.0085
Surveillance hours per week per bed	0.308	1.36 (0.85-2.17)	0.197
other infection control activities per week per bed	0.224	1.25 (0.87-1.77)	0.2029
Nurse/bed ratio	-0.0577	0.94 (0.89-1.00)	0.0532
housekeeping expenditure per 10,000 beds	0.2837	1.33 (1.21-1.46)	<.0001
nursing vacancies per bed	0.1339	1.14 (0.85-1.54)	0.3818
Bed-size 0-99 vs ≥400	-0.8198	0.44 (0.32-0.6)	<.0001
Bed-size 100-199 vs ≥400	-0.6979	0.50 (0.38-0.64)	<.0001
Bed-size 200-299 vs ≥400	-0.4041	0.67 (0.51-0.87)	0.0027
Bed-size 300-399 vs ≥400	-0.2385	0.79 (0.59-1.06)	0.1094
EHR Y vs N	-0.166	0.85 (0.72-1)	0.0502
# skilled nursing beds	0.00284	1.003 (1.003-1.005)	0.0055
Urban vs Rural	0.0925	1.10 (0.90-1.33)	0.3521
cmi_quartile 0 vs 3	-0.286	0.75 (0.58-0.97)	0.0268
cmi_quartile 1 vs 3	-0.2617	0.77 (0.62-0.96)	0.019
cmi_quartile 2 vs 3	-0.1295	0.88 (0.72-1.07)	0.2017

record (EHR) implementation, number of skilled nursing beds, rural or urban location, and Medicare patient case-mix (cmi_quartiles). **Results:** In our model, negative logit model point estimates indicated that increased values of the variable are associated with a lower odds of having a higher number of penalties. The final data set consisted of 3,004 US hospitals. Lower penalties were significantly associated with higher IP-to-bed ratio. Although the point estimates were <1, an association between lower penalties and higher nurse-to-bed ratios or electronic health records was not demonstrated (Table 1). **Conclusions:** Our results suggest that after controlling for selected hospital structural factors, incremental resources related to infection control have a protective association with HCARP penalties.

Presentation Type:
Poster Presentation
Association of Receipt of Antibiotics with Patient Satisfaction for Caregivers of Children Presenting to Urgent-Care Settings
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Background: The Press Ganey (PG) Medical Practice Survey is a commonly used questionnaire for measuring patient experience in healthcare. Our objective was to evaluate the PG surveys completed by caregivers of children presenting for urgent care evaluation of acute respiratory infections (ARIs) to determine any correlation with receipt of antibiotics during their visit. **Methods:** We evaluated responses to the PG urgent-care surveys for encounters of children <18 years presenting with ARIs (ie, sinusitis, bronchitis, pharyngitis, upper respiratory infection, acute otitis media, or serous otitis media with effusion) within 9 University of Utah urgent-care centers. Scores could range from 0 to 100. Because the distributions of scores followed right- skewed distribution with a high ceiling effect, we defined scores as dissatisfied with their care (≤25th percentile) and satisfied with their care (scores >25th percentile). Univariate and multivariable generalized mixed-effects logistic regression was used to assess correlates of patient dissatisfaction. Random intercepts were included for each provider to account for correlation within the same provider. Separate models were used for each PG component score. Multivariable models adjusted for receipt of antibiotics, age, gender, race, ethnicity, and provider type. **Results:** Overall, 388 of 520 responses (74.6%) indicated satisfaction and 132 responses (25.4%) indicated dissatisfaction. Among patients who did not receive antibiotics, 87 of 284 responses (30.6%) indicated dissatisfaction versus 45 of 236 (19.1%) who did receive antibiotics. Among patients who were dissatisfied with their clinician, raw clinician PG scores were higher among patients who received antibiotics (mean, 64.5; standard deviation [SD], 16.9) versus those who did not receive antibiotics (mean, 54.7; SD, 24.4; $P = .015$) (Table 1). In a multivariable analysis, receipt of antibiotics was associated with a reduction in patient dissatisfaction overall (odds ratio, 0.55; 95% CI, 0.36–0.85). **Conclusions:** Overall, most responses for patients seen for ARIs in pediatric urgent care were satisfied. However, a significantly higher proportion of responses for patients who did not receive