



**Conclusion.** The dashboard may be successfully integrated into institutions based on the complicated interplay between program structure (e.g., # FTE) and dashboard self-efficacy, experience with data-activities, and trust of population data. Incorporating user-centered design of dashboards supports the development of fully functional teams and has the potential for important population health impact.

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#### 1075. Changing Pattern of Antibiotics Usage Among Hospitalized Patients of a Tertiary Hospital in South Korea: 2004–2013

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**Background.** This study was performed to evaluate the changing pattern of antibiotic usage among hospitalized patients of tertiary hospital in South Korea.

**Methods.** Total antibiotics prescription record of hospitalized patients from 2004 to 2013 were collected at a tertiary university hospitals. The antibiotics is defined as class J01 from anatomical therapeutic chemical classification system (ATC). The consumption of each class of antibiotic was converted to defined daily dose (DDD)/1,000 patient-days by using ATC of World Health Organization.

**Results.** Over the 10-year study period, the annual consumption of systemic antibiotics ranged from 815.10 to 1047.96. The proportion of broad-spectrum antibiotics and non-broad-spectrum antibiotics use are as follows: 45.4% (417.55/920.69) vs. 54.6% (503.15/920.69), respectively. A 16.9% of decrease in total antibiotics consumption was observed in 2013 compared with 2004 (1000.69 in 2004 vs. 831.46 in 2013). The decrease rate of non-broad spectrum antibiotics usage was 39.3% during the study period (607.21 in 2004 vs. 368.88 in 2013). In contrast, a stepwise increase in consumption of broad-spectrum antibiotics was observed (14.9% of increase; 393.48 in 2004 vs. 462.58 in 2013). Among broad-spectrum antibiotics, a significant decrease trend was observed for third-generation cephalosporins ( $P < 0.001$ ). In contrast, a significant increase trend was observed for  $\beta$ -lactam/lactamase ( $P < 0.001$ ). The monthly overall consumption trend of fluoroquinolones and glycopeptides remained stable ( $P = 0.061$ ;  $P = 0.107$ , respectively). In addition, there were significant decrease trends for consumption of non-broad-spectrum antibiotics, including first generation cephalosporins ( $P = 0.019$ ) and aminoglycosides ( $P = 0.004$ ). However, the consumption of second generation cephalosporins, imidazole and penicillins showed a stable trend ( $P = 0.175$ ;  $P = 0.320$ ;  $P = 0.234$ , respectively).

**Conclusion.** A total antibiotics consumption showed significantly decrease trend from 2004 to 2013. In contrast, a stepwise increase in consumption of broad-spectrum antibiotics was observed in the tertiary hospital in South Korea.

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#### 1076. Effectiveness of Antimicrobial Use and Diagnostic Testing in the Postoperative Setting for Colectomy, Craniectomy and Knee Arthroplasty

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**Background.** Patients with postoperative fevers tend to receive empiric antibiotics and a diagnostic workup even though postoperative fevers are frequently physiologic. The yield of postoperative workups ranges from 2–24%. Studying the effectiveness of antibiotic use and diagnostic testing across surgeries may provide insight to improve value of care for the postoperative patient.

**Methods.** We evaluated all patients who had elective colectomy, craniectomy and knee arthroplasty (KA) at NorthShore University HealthSystem between October 2009 and December 2013. Inpatient clinical data were extracted from the electronic data warehouse. All complications were confirmed by chart review. Antimicrobial Effectiveness was defined as the use of antibiotics only when patient had a confirmed infectious complication (pneumonia, urinary tract infection, etc) during hospital course. Diagnostic Effectiveness was defined as the use of diagnostic test only when patient had a confirmed complication. Length-of-stay (LOS) and cost were compared using Student's *t*-test.

**Results.** 233 patients had a colectomy, 506 had a craniectomy and 4,693 had a knee arthroplasty. Antibiotic and Workup Effectiveness rates were 51% and 45.33% for colectomy, 18% and 22.53% for craniectomy, and 27% and 9.89% for KA, respectively.

Effectiveness of antimicrobial use and diagnostic workups are shown in Figure 1. Patients without complications in all 3 surgeries who had a workup, as compared with those patients without a workup, were more likely to have a longer LOS (colectomy: 8.95 days vs. 5.08 days,  $P < 0.0001$ ; craniectomy: 4.88 days vs. 2.62 days,  $P < 0.001$ ; KA: 3.22 days vs. 2.95 days,  $P < 0.0001$ ) and a higher cost of hospitalization (colectomy: \$76,034 vs. \$42,865,  $P < 0.001$ ; craniectomy: \$83,779 vs. \$58,998,  $P < 0.001$ ; KA: \$53,451 vs. \$52,159,  $P < 0.001$ ).

**Conclusion.** A significant fraction of empiric antibiotics in the postoperative setting are unnecessary across multiple surgeries. Diagnostic testing effectiveness rates are low and have consequences in terms of healthcare utilization.

#### Effectiveness of management in the postoperative setting for 3 surgeries

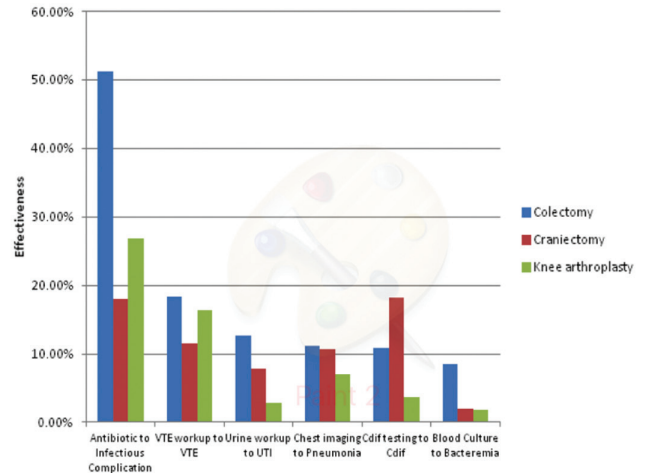


Figure 1: Bars represent the number of complications per use of antibiotics or diagnostic testing. Antibiotic use measured as any antibiotic beyond the 24-hour perioperative period. VTE work up includes computed tomography (CT) scan of chest without contrast or venous dopplers. Urine work up includes urine analysis and/or urine culture. Chest imaging includes chest x-ray or non-contrast CT chest. C.Dif testing includes C.Dif PCR. Abbreviations: VTE, venous thromboembolism; C.Dif, *Clostridium difficile*.

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#### 1077. Using Preventive Health Alerts in the Electronic Health Record Improves Testing Rates for Infants Perinatally-Exposed to Hepatitis C

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**Background.** Perinatal exposure to hepatitis C virus (HCV) is a major public health issue, as testing rates are poor and many infected patients remain unidentified. We sought to use the electronic health record (EHR) to improve testing rates among infants born to HCV-infected mothers in an urban, safety-net hospital system.

**Methods.** Our study population was identified using our EHR database (Hyperspace Epic 2014, EpicCare Systems, Verona, WI). Children were included in the study if they had perinatal HCV exposure, were between the ages of 18 months to 18 years, and had at least one encounter in primary or urgent care during the study period. Our study included retrospective (October 2011-February 2015) and prospective (February 2015-May 2016) arms. Our EHR-based intervention, which we initiated in the prospective arm, linked the patient to a one-time HCV antibody test on or after the age of 18 months using a preventive health forecasting engine. The preventive health forecasting engine activated a point of care clinical advisory alert for all children with perinatal hepatitis C exposure. This alert was associated with an order for a HCV antibody test and would occur in all well child or urgent care encounters during the study period.

**Results.** 5.6% (7/125) of the patients with perinatal HCV exposure had a HCV antibody test performed on or after 18 months of age during the retrospective arm. After initiation of our EHR-based intervention, this proportion significantly increased to 18.7% (28/150) ( $P < 0.002$ ; CI, 1.6 to 9.2; OR, 3.9).

**Conclusion.** Among patients with perinatal HCV exposure, using a point of care clinical advisory within the EHR significantly increased the rate of HCV antibody testing in accordance with American Academy of Pediatrics recommendations. However, a significant number of infants continue to not be appropriately tested. More EHR-based interventions combined with increased physician awareness of appropriate HCV testing in perinatally-exposed infants is imperative.

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