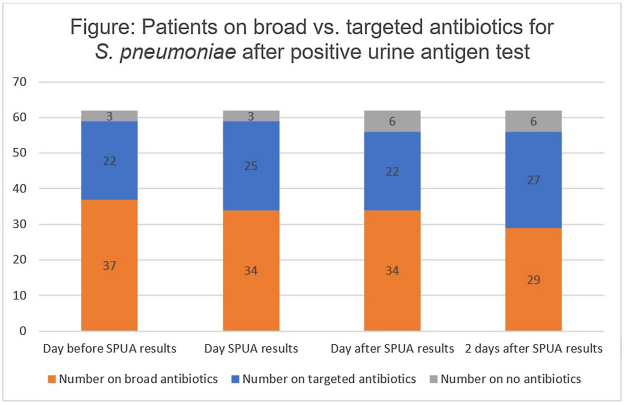


Abbreviations: SPUA (Streptococcus pneumoniae urine antigen test)

(PMID:23111919, PMID: 28053969). The SPUA test cost approximately $44,022 (based on $29 test price) but has limited utility in a real-world setting.

Disclosure: Krutika Hornback: Speaker's Bureau - Cepheid Diagnostics

Antimicrobial Stewardship & Healthcare Epidemiology 2024;4(Suppl. S1):s77–s78

doi:10.1017/ash.2024.209

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Diagnostic Stewardship

Utilization of multiplex molecular panels for urinary tract infections, Medicare claims, 2016 – 2022

Kelly Hatfield, Centers for Disease Control and Prevention; Sarah Kabbani, Centers for Disease Control and Prevention; Dustin Currie, Centers for Disease Control and Prevention; Christine Kim, Centers for Disease Control and Prevention; Isaac See, Centers for Disease Control and Prevention; Kara Jacobs Slifka, Centers for Disease Control and Prevention; Shelley Magill, Centers for Disease Control and Prevention; Lauri Hicks, Centers for Disease Control and Prevention; Lawrence McDonald, Centers for Disease Control and Prevention; John Jernigan, Centers for Disease Control and Prevention; Sujan Reddy, Centers for Disease Control and Prevention and Joseph Lutgring, Centers for Disease Control and Prevention

Background: Multiplex molecular tests for infectious diseases can provide highly sensitive results rapidly; however, these tests may more readily detect asymptomatic colonization. There are reports of non-FDA approved laboratory-developed multiplex tests for the diagnosis of urinary tract infections (UTI). Differentiating UTI from asymptomatic bacteriuria is challenging, especially in older adults. The increased sensitivity of multiplex tests may exacerbate this challenge. We sought to describe the use of multiplex testing for UTIs in Medicare claims. **Methods:** Multiplex testing was identified using carrier claims submitted by non-institutional providers using the Chronic Conditions Warehouse for 2016 – 2022. Because there are no CPT-4 codes specifying UTI multiplex testing, we included claims as described in Figure 1 and categorized claims based on the primary ICD-10-CM diagnosis. The payment amounts for line items related to testing for infectious agents were summed. Laboratories were counted using CLIA numbers listed on corresponding claims. Beneficiaries residing in a nursing home at the time of their claim were identified using stay information derived from the Minimum Dataset 3.0. For comparison, similar characteristics among carrier claims with a CPT-4 code indicating urine culture were also described. **Results:** Claims for unspecified multiplex molecular tests overall have increased, driven by increases in claims with a primary UTI diagnosis (from 8,521 in 2016 to 386,943 in 2022), while urine cultures have not (Figure 1). In 2022, 65% of all unspecified multiplex tests were linked to a diagnosis of UTI; UTI multiplex claims were associated with 647 laboratories. For UTI claims, the median cost per claim for line items related to multiplex testing was $589 compared to $13 for urine culture-related line items. Overall, 8% of UTI multiplex claims were for beneficiaries residing in a nursing home. **Conclusions:** Claims for non-FDA approved unspecified multiplex tests associated with a primary diagnosis of UTI have increased >45-times between 2016-2021 and have >45-times higher median costs than urine cultures. The use of this testing in the Medicare population, including nursing home residents, is of potential concern given that inappropriate treatment of asymptomatic bacteriuria has been described to be common in older adults. Research is needed to outline use cases where UTI multiplex testing may be beneficial. Appropriate use of diagnostic testing is important to minimize diagnostic errors and avoid unnecessary antibiotic use.

Figure 1. Overview of method to identify Medicare carrier claims for unspecified multiplex tests.

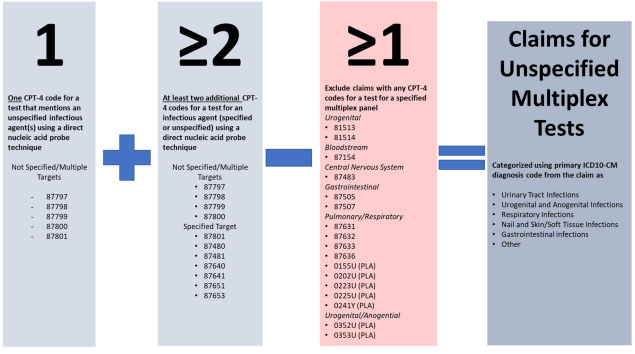
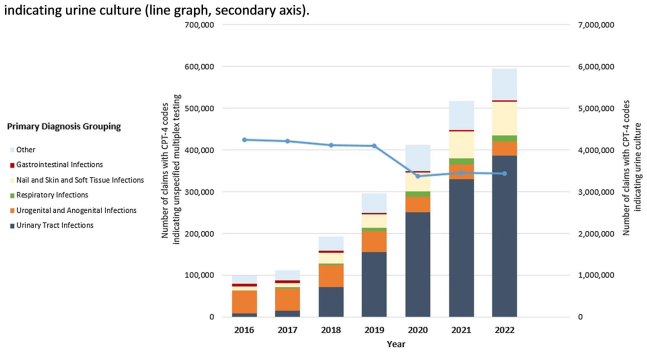


Figure 2. Annual number of carrier claims with CPT-4 codes indicating unspecified multiplex tests (bar graph) stratified by primary infection diagnosis and annual number of carrier claims with CPT-4 codes indicating urine culture (line graph, secondary axis).



Antimicrobial Stewardship & Healthcare Epidemiology 2024;4(Suppl. S1):s78

doi:10.1017/ash.2024.210

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Diagnostic Stewardship

High Prevalence of Laxative Use Among Those Tested for Clostridioides difficile Infection in VA Hospitals

Geneva Wilson, Edward Hines Jr. VA Hospital; Lishan Cao, None; Margaret Fitzpatrick, University of Colorado Anschutz Medical Center; Katie Suda, University of Pittsburgh School of Medicine and Charlesnika Evans, Northwestern University, Feinberg School of Medicine

Background: Clostridioides difficile infection (CDI) is associated with 500,000 infections and 30,000 deaths per year. Inappropriate testing and treatment of patients with asymptomatic colonization occurs frequently (between 15% and 41%). The VA CDI guidelines emphasize avoidance of CDI testing in patients with laxative use within the previous 48 hours due to the high likelihood of non-infectious diarrhea. The objective of this

study was to assess laxative administration among inpatients tested for CDI in VA hospitals and identify factors associated with guideline discordance. **Methods:** Adults hospitalized in Illinois, Wisconsin, and Michigan VA Medical Centers from January 2019-December 2022 with a CDI test performed during the admission were included. CDI tests included Toxin B gene Polymerase Chain Reaction or Toxin Enzyme Immunoassay. Tests were defined as positive, negative, or cancelled according to the diagnostic protocols of the VA testing laboratories. Laxative use, patient demographics, admission data, and comorbidities were collected from the VA Corporate Data Warehouse. Guideline discordant testing was defined as a diagnostic test for CDI ordered within 48 hours of a recorded laxative dose. Factors associated with discordant testing were analyzed using clustered binomial logistic regression models. Analyses were completed using SAS 9.4. **Results:** There were 7,326 tests ordered for 4,888 patients during the study. Patients were predominantly White (61.8%), male (95.6%), and elderly (mean age=70.0 standard deviation=12.1). Most (59.0%) patients had received at least one dose of laxative in the 48 hours preceding their CDI test. Being Black (Odds Ratio (OR)=0.86 (95%Confidence Interval (95%CI) =0.76,0.98) or Hispanic (OR (95%CI) =0.62(0.48,0.82) vs White) was associated with a decreased likelihood of inappropriate testing due to recent laxative use. Being tested at a rural facility (OR (95%CI) =1.23 (1.07,1.41) vs urban), within a long-term care (LTC) unit (OR (95%CI) =1.67 (1.41,1.97) vs inpatient), or within an intensive care unit (ICU) (OR (95%CI) =1.40 (1.24,1.59)) were all associated with an increased likelihood of being inappropriately tested. Guideline discordant tests were more likely to have negative results (OR (95%CI) =1.25 (1.05,1.49)) compared to guideline concordant tests. Discussion: Laxative administration in the 48 hours preceding CDI testing was common among hospitalized Veterans and associated with a lower likelihood of positive **Results:** This echoes non-VA studies where laxative use was reported at 44%. An increased likelihood of guideline discordant testing in ICU and LTC settings suggests the need for greater diagnostic stewardship interventions. Additionally, further work to determine negative outcomes associated with inappropriate testing are needed.

Antimicrobial Stewardship & Healthcare Epidemiology 2024;4(Suppl. S1):s78–s79
doi:10.1017/ash.2024.211

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Diagnostic Stewardship

Survey of VA Laboratory Practices for Carbapenem-resistant Acinetobacter baumannii and Pseudomonas aeruginosa

Aubrey Sawyer, Northwestern University, Feinberg School of Medicine; Cara Ray, Department of Veterans Affairs; James Stacey Klutts, Department of Veterans Affairs; Margaret Fitzpatrick, University of Colorado Anschutz Medical Center; Katie Suda, University of Pittsburgh School of Medicine; Natalie Hicks, National Infectious Diseases Service (NIDS); Martin Evans, Vha; Makoto Jones, Northwestern University, Feinberg School of Medicine; Christopher Pfeiffer, Northwestern University, Feinberg School of Medicine and Charlesnika Evans, Northwestern University, Feinberg School of Medicine

Background: Carbapenem-resistant Acinetobacter baumannii (CRAB) and Pseudomonas aeruginosa (CRPA) are drug-resistant pathogens causing high mortality rates with limited treatment options. Understanding the incidence of these organisms and laboratory knowledge of testing protocols is important for controlling their spread in healthcare settings. This project assessed how often Veterans Affairs (VA) healthcare facilities identify CRAB and CRPA and testing practices used. **Method:** An electronic survey was distributed to 126 VA acute care facilities September-October 2023. The survey focused on CRAB and CRPA incidence, testing and identification, and availability of testing resources. Responses were analyzed by complexity of patients treated at VA facilities (High, Medium, Low) using Fisher's exact tests. **Result:** 77 (61.1%) facilities responded, most in urban settings (85.4%). Most respondents were lead or supervisory laboratory technologists (84.2%) from high complexity facilities (69.0%). Few facilities detected CRAB ≥ once/month (4.4%), with most reporting that they have not seen CRAB at their facility (55.0%). CRPA was detected more frequently: 19% of facilities with isolates ≥ once/month, 29.2% a few times per year, and 26.9% reporting had not seen the organism. No differences in CRAB or CRPA incidence was found by facility complexity. Nearly all facilities, regardless of complexity, utilize the recommended methods of MIC or disk diffusion to identify CRAB or CRPA (91.9%) with remaining facilities reporting that testing is done off-site (7.8%). More high complexity facilities perform on-site testing compared to low complexity facilities (32.0% vs 2.7%, p=0.04). 83% of laboratories test for Carbapenemase production, with one-fourth using off-site reference labs. One-fourth of facilities perform additional antibiotic susceptibility testing for CRAB and CRPA isolates, most of which test for susceptibility to combination antibiotics; no differences between complexities were found. Agreement that sufficient laboratory and equipment resources were available was higher in high complexity than in medium complexity facilities (70.7% vs 33.3%, p=0.01), but not low complexity facilities (43.8%). **Conclusion:** Having timely and accurate testing protocols for CRAB and CRPA are important to quickly control spread and reduce associated mortality. This study shows that most VA protocols follow recommended testing and identification guidelines. Interestingly, there was no difference in CRAB or CRPA incidence for facilities providing higher vs lower complexity of care. While high and low complexity facilities generally reported sufficient resources for CRAB and CRPA evaluation, some medium-complexity labs, who may feel more compelled than low-complexity labs to bring testing in house, reported that additional resources would be required.

Antimicrobial Stewardship & Healthcare Epidemiology 2024;4(Suppl. S1):s79
doi:10.1017/ash.2024.212

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Diagnostic Stewardship

A Stepwise Diagnostic Stewardship Approach to Reduce Unnecessary Urine Cultures, Asymptomatic Bacteriuria, and CAUTI Rate

Mina Said, Medicine / Infectious diseases UPMC; Vanessa Kung, Pittsburgh VA Hospital; Abigail Beck, VA Pittsburgh; Deanna Buehrle, VA Pittsburgh Healthcare System; Kristin Nagaro, VA Pittsburgh Healthcare System; Graham Snyder, UPMC/University of Pittsburgh and Elise Martin, VA Pittsburgh Healthcare System

Background: Clinically non-indicated asymptomatic bacteriuria (ASB) identification precipitates higher reported catheter-associated urinary tract infection (CAUTI) rates and urinary tract infection (UTI)-directed antimicrobial overuse. Published diagnostic stewardship interventions to reduce ASB were mostly tested individually and heterogeneously; hence the optimal bundle approach is yet to be defined. **Methods:** We performed a single-center sequential quasi-experimental study involving hospitalized,