Methods. rtPCR test positivity rate and turnaround time were determined among 89 specimens tested at CDC from 54 outbreak patients with suspected psittacosis. rtPCR testing was performed on nucleic acid extracted from clinical specimens using oligonucleotides targeting the *C. psittaci* locus tag CPSIT_RS01985. Clinical information was collected by patient interview and medical record review.

Results. Positivity rates among the most common specimen types were 4.4% (2/46) for nasopharyngeal (NP) swab, 36.4% (8/22) for sputum, and 80.0% (4/5) for stool. Of 21 (24%) specimens with available data, the average time from patient symptom onset to specimen collection was 6 days (range 1–11 days). *C. psittaci* was detected in specimens from 13 of 54 outbreak patients tested (Table 1); all 13 patients had radiographically-confirmed pneumonia, and 7 were rtPCR-positive from a lower respiratory specimen only. Paired sputum and NP swab specimens were tested for 6 patients; *C. psittaci* was detected in all sputum but only 1 NP swab. The positive NP swab was from a patient requiring intensive care unit admission and intubation. All results were reported within 1 business day of specimen receipt in the lab.

Conclusion. These data suggest that lower respiratory specimens are more sensitive than NP swabs for rtPCR detection of *C. psittaci*; stool might be a suitable alternative. Widespread implementation of rtPCR testing using appropriate specimen types could improve psittacosis detection and inform timely public health interventions.

TABLE 1. Qualitative and cycle threshold (Ct [a]) results for outbreak patients with rtPCR detection of *C. psittaci*

	Lower Respiratory		Upper Respiratory	Gastrointestinal
Patient	Sputum	Bronchoalveloar lavage	NP Swab	Stool
1	Pos (26)		Neg	
2	Pos (30)		Neg	
3	Pos (30)		Neg	Pos (37)
4	Pos (26)		Neg	
5	Pos (28)		Neg	
6	Pos (27)		Pos (33)	
7	Pos (28)			Pos (32)
8	Pos (30)			Neg
9		Pos (30)		
10		Pos (31)		
11			Neg	Pos (38)
12			Pos (31) [b]	
13				Pos (32)

[a] Average Ct values for triplicate rtPCR tests are shown in parentheses

[b] Second NP collected 3 days later was negative

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

2174. Comparison of the Verigene® and the ePlex® Blood Culture Identification Panels for Gram-Positive and Gram-Negative Bloodstream Infections

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Session: 243. Bacterial Diagnostics

Saturday, October 5, 2019: 12:15 PM

Background. Rapid diagnostic testing for the management of bloodstream infections has become paramount to improving patient outcomes. The primary objective of this study was to assess the differences between 2 FDA approved instruments.

Methods. Retrospective study from August 2018 to April 2019 at the University of Maryland Medical Center. One positive blood culture from each patient was tested using the Verigene® blood culture Gram-positive (BC-GP) or Gram-negative (BC-GN) panels based on the Gram stain and then analyzed using the ePlex® Blood Culture Identification (BCID) Gram-positive (BCID-GP) or Gram-negative (BCID-GN) research-use-only panels and compared with culture results.

Results. The study consisted of 140 positive blood culture bottles. 14 bottles were excluded for a total of 55 GN and 71 GP bottles. Of the 55 GN bottles, 3 had 2 GN rods for a total of 58 GNRs. BCID-GN missed 1 *P. aeruginosa*, 2 *S. maltophilia*, and 1 *E. coli* for a 93% (53/57) positive agreement. The BCID-GN does not detect *A. junii* and therefore it was excluded. BC-GN did not identify 1 *K. pneumoniae* with a 98% (47/48) positive agreement. BC-GN does not include the detection of *S. maltophilia* (4), *Serratia* (4), *Morganella* (1), and *B. fragilis* (1)and these were excluded in the BC-GN analysis. CTX-M was the only resistant marker detected and both panels identified it correctly. 5 samples using the BCID-GN also detected Pan Gram-Positive; 3 grew GP organisms, the other 2 only grew *E. coli*. Of the 71 GP bottles, 3 had two GP bacteria totaling 74 GPs. BCID-GP missed 1 *S. aureus*, 1 invalid, and called an *E. faecalis* that was not identified by the reference method for a 99% (72/73) positive agreement. BC-GP does not detect *Micrococcus* (6) or *E. gallinarum* (1) and missed 1 *S. mitis/oralis* for a 99% (66/67) positive agreement. 18 samples were positive for mecA detected by both panels. 4 samples were vanA/B positive; 1 by BCID-GP was sensitive to vancomycin and not detected by BC-GP. BCID-GP detected 1 sample as Pan Gram-negative although a GNR was not detected.

Conclusion. BothVerigene® and ePlex® GP and GN panels have a high percent positive agreement. Laboratories should take into consideration the epidemiology of their bloodstream infections when deciding on panels for the rapid detection of bloodstream infections.

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2175. Rapid Detection of Carbapenemase Producing Organisms Directly from Blood Cultures Positive for Gram-Negative Bacilli

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Saturday, October 5, 2019: 12:15 PM

Background. The rapid detection of carbapenemase-producing organisms (CPOs) directly from blood cultures (BC) positive for Gram-negative bacilli (GNB) may accelerate the appropriate treatment of at-risk patients. Our objective was to evaluate the performance of two commercial assays in the rapid detection of CPOs directly from BC positive for GNB.

Methods. BC positive for GNB, taken from patients within the Calgary Health Zone over a 3 month period, were tested for the presence of CPOs with βCARBA® and NG-Test® CARBA 5. A subset of sterile BC samples was seeded with multi-drug-resistant (MDR) GNB. BC were incubated using the Bact-Alert™ system. Positive BC from clinical and seeded samples was tested directly with βCARBA and CARBA 5 from BC pellets processed for direct testing using an ammonium chloride lysis and wash method. Sensitivity, specificity, negative predictive value (NPV) and positive predictive value (PPV) were calculated with 95% confidence intervals for binomial proportions.

Results. 65 samples were tested (30 clinical, 35 seeded). Seeded samples included 1 GES, 4 IMP, 6 KPC, 1 co-producing KPC and NDM, 9 OXA, 4 VIM, 5 NDM, and 5 non-CPO carbapenem-resistant organisms. βCARBA had a sensitivity, specificity, NPV and PPV of 100% (88.4% - 100%), 65.7% (47.8–80.9%), 100%, and 71.4% (61.3%–79.8%), respectively. CARBA 5 had a sensitivity, specificity, NPV and PPV of 90.0% (73.5%–97.9%), 100% (90.0%–100%), 92.1% (80.0%–97.2%), and 100%. When excluding GES, which is known not to be detected by CARBA 5, sensitivity and NPV increased to 93.1% (77.2%–99.2%) and 93.1% (78.0%–98.1%), respectively. False negatives for βCARBA occurred with 1 VIM-1 and IMP-14.

Conclusion. This study demonstrates that the detection of CPOs directly from positive BC can be accurately achieved. βCARBA had excellent sensitivity but suffered from poor specificity. CARBA 5 had good sensitivity and specificity but is unable to detect certain CPOs. Testing positive BC directly using βCARBA and/or CARBA 5 may be useful in rapidly detecting CPOs. Results of direct testing from the CARBA5 assay would quickly identify patients amenable to treatment with avibactam combination compounds.

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2176. A New Rapid Test for Detection of The Cefazolin Inoculum Effect (CIE) in Methicillin-*Susceptible Staphylococcus aureus* (MSSA)

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Session: 243. Bacterial Diagnostics

Saturday, October 5, 2019: 12:15 PM

Background. Most MSSA harbor one of the four different variants of β-lactamase (BlaZ) (A, B, C and D). The CIE is defined as an MIC >16 μg/mL when a high inoculum (10^7 CFU/mL) is used and depends on the presence of BlaZ. The presence of the CIE has been associated with therapeutic failure in invasive MSSA infections. In some countries of South America, the prevalence of CIE is high, ranging from 36% to 51% (Colombia and Argentina, respectively). Type A BlaZ is most often associated with the CIE due to its high affinity for cefazolin. Here, we developed a rapid test based on the premise that the extracellular form of BlaZ is responsible for the CIE. We aimed to identify invasive MSSA that exhibit the CIE and validate the test in two cohorts of isolates from patients in Colombia and Argentina

Methods. 152 MSSA clinical isolates were collected from Colombia (n = 71) and Argentina (n = 81). We determined MIC at standard and high inoculum. We developed a test using induction of BlaZ with ampicillin (150 μg/mL) for 20 minutes and, using the supernatant for incubation with nitrocefin for 30 min. A change in color from yellow to red was considered positive. MSSA TX0117 (BlaZ +, with the CIE), ATCC 29213 (BlaZ-negative) and ATCC 25923 (BlaZ + lacking the CIE) were used as controls. BlaZ typing of all Argentinian isolates was available by sequencing

Results. A high proportion (43%) of MSSA exhibited the CIE (34% and 52% of Colombian and Argentinian isolates, respectively) by MIC. The rapid test identified 76% of isolates exhibiting the CIE and correctly ruled out all isolates lacking the CIE (sensitivity 80%, specificity 100%). Furthermore, the rapid test detected all isolates with the CIE that harbored Type A BlaZ from Argentina. Conversely, the test failed to identify the CIE in Argentinian isolates that produce type B and C BlaZ. The sensitivity and specificity of the rapid test for the Colombian isolates whose BlaZ type was unknown were 89% and 100%, respectively.