The post implementation period was independently associated with reduced hospital mortality (32% vs. 11%, p<0.01). There were no significant differences in LOS or clinical pharmacy staffing models on TOT.

**Baseline Characteristics**

| Characteristic | Pre-implementation (n=58) | Post-implementation (n=54) | p-value |
|---------------|--------------------------|--------------------------|---------|
| Age (years)   | 57.3 ± 17.8              | 54.6 ± 17.4              | 0.411   |
| Sex (male)    | 42.4%                    | 38.9%                    | 0.547   |
| ICU admission | 17 (30%)                 | 25 (46.3%)               | 0.364   |
| Pneumonia score | 2.1 ± 1.2               | 2.1 ± 1.2                | 0.673   |
| Neuroimmunology (HIV+ songs) | 23 (41%)               | 29 (52.8%)               | 0.492   |
| Infection source | Gastrointestinal/Abdominal (90%) | Gastrointestinal/Abdominal (86%) | 0.703   |
| GERD patients | 12 (21%)                 | 15 (28%)                 | 0.302   |
| Gastrointestinal type of Pathogen | 75 (131)               | 68 (129)                 | 0.464   |
| Candida (2%) | 3 (5.5%)                 | 2 (3.7%)                 | 1.000   |
| Bacteremia (20%) | 25 (43.1%)              | 21 (39.6%)               | 0.512   |
| Listeria | 1 (1.7%)                 | 1 (1.9%)                 | 0.819   |
| Gonococcus | 4 (6.9%)                 | 5 (9.3%)                 | 0.619   |
| Bloxouum | 3 (5.5%)                 | 2 (3.7%)                 | 0.619   |
| Respiratory | 3 (5.5%)                 | 2 (3.7%)                 | 0.619   |
| Inhospital mortality | 22 (38.7%)              | 28 (51.9%)               | 0.117   |
| Not fully Staffed (n=54) | 5 (9.3%)                 | 2 (3.7%)                 | 0.619   |
| Time to Antimicrobial Therapy Optimization (h) | 22.1 ± 5.9               | 21.2 ± 5.7               | 0.332   |
| Time in Hospital with all Causes of Death (h) | 16 (331)                 | 16 (331)                 | 0.699   |
| Hospital LOS (days) | 3.2 ± 3.8               | 4.5 ± 4.2                | 0.009   |

**Logical Regression**

- **Antimicrobial Optimization Outcomes**
  - Pre-implementation: OR (95% CI): 0.21 (0.61–0.73), p=0.01
  - Post-implementation: OR (95% CI): 0.21 (0.61–0.73), p=0.01

**Primary and secondary outcomes data**

**Conclusion.** The implementation of the Verigene® BC-GP with Vigilanz® substantially decreased TOT for VRE BSIs and was associated with reduced hospital mortality. This study highlights the positive impact of RDTs on shorter TOT and associated clinical outcomes.

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

11. Evaluation of the Bact/Alert® VIRTUO® in Terms of Time to Detection, Performance, Workflow Efficiency and Impact on Patient Management, Compared to the BACTEC® FX Automated Blood Culture System

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**Session:** O-3. Advances in Time to Test Results in the Bacteriology Lab

**Background.** Bloodstream infections are associated with high morbidity and mortality. PCR-based rapid diagnostic tests provide prompt identification of infectious etiologies within hours. This study evaluated the impact of the Verigene® Gram-positive blood culture (GP-BC) panel on the outcomes on patients with VRE BSIs.

**Results.** A total of 104 patients with VRE BSIs were included in the study; 50 and 54 in the pre- and post-implementation periods, respectively. There were no differences in baseline characteristics between the groups. TOT was significantly shorter in the post vs. pre group (29 hrs ± 36 vs. 67 hrs ± 124, p<0.01). After adjusting for age, sex, severity of illness, treatment/dose, the post implementation period was independently associated with reduced hospital mortality (aOR 0.21, CI 0.61–0.73, p<0.01). There were no significant differences in LOS or clinical pharmacy staffing models on TOT.
VIRTUAL and 802(15.6%) for BACTEC (p=0.0003). TTD and proportion of aerobic/anaerobic bottles is shown in Table. Hands-on-time was reduced by 15 minutes/day when using VIRTUAL.

**Table**

We have compared on a large scale and in a “real world” setting the performance of two automatic blood culture incubators. TTD was significantly lower for the VIRTUAL incubated samples, with differences in both systems depending on the type of bottle (aerobic vs. anaerobic). The number of positive results was significantly higher for the VIRTUAL incubated samples, which might impact antimicrobial prescription and clinical outcomes.

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12. Evaluation of Rapid Phenotypic Testing for KPC Carbapenemase Producing klebsiella Pneumoniae Directly from Positive Blood Cultures by Use of “Hot Chocolate” Plates

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**Session:** O-3. Advances in Time to Test Results to the Bacteriology Lab

**Background.** Invasive infections with Carbapenemase Producing Enterobacteria are associated with considerable morbidity and mortality, in part due to the risk of inappropriate empiric therapy. Consequently, the rapid identification of carbapenem resistance is crucial to the management of these infections. We sought to evaluate possible reductions in turnaround time to identification of this resistance in blood cultures growing these organisms by applying rapid phenotypic test kits to growth from “hot chocolate” plates.

**Methods.** 30 blood cultures, spiked with carbapenem resistant Klebsiella pneumoniae isolates or susceptible controls, were inoculated onto chocolate agars that had pre-warmed at 37°C. These plates were incubated at 37°C for 3.5 hours. The resulting minimal growth was then identified using MALDI-TOF and underwent rapid phenotypic testing using three commercially available products (β-lacta and β-carba, from Bio-Rad, Marne-la-Coquette, France, and Carba-NP, from biomerieux, Durham, NC). The time to identification of carbapenem resistance using this method was then compared to that of the conventional laboratory workup.

**Results.** The identification was 100% accurate to the species level using MALDI-TOF up to the 3.5 hour growth on the “hot chocolate” plate. The β-lacta kits identified resistance to 3rd generation cephalosporins for all ESBL and carbapenemase producing Klebsiella pneumoniae isolates, while the β-carba and Carba-NP kits identified carbapenem resistance only in the carbapenemase producers. The sensitivity of all assays was 100% (95% CI 0.87–1.0) and the specificity of carbapenem detection was 100% (97.5% one-sided CI 0.4–1.0). The corresponding sensitivities and specificities of direct disc diffusion for ertapenem resistance detection were 88.5% (95% CI 0.70–0.98) and 100% (95% CI 0.40–1.0) respectively. The turnaround time for the rapid kits coupled to the “hot chocolate” plates was 4.25 to 5.1 hours as compared to 16 hours for the conventional workup.

**Conclusion.** Rapid phenotypic tests performed after inoculation of “hot chocolate” plates are highly sensitive for the presence of carbapenemase production and can be incorporated into the laboratory workflow for Klebsiella pneumoniae with important reductions in turnaround time.

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14. Outcomes from the AHRQ Safety Program for Improving Antibiotic Use Across 439 Long-Term Care Facilities

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**Session:** O-4. Antimicrobial Stewardship in Special Populations/Non-Acute Care

**Background.** Implementing effective antibiotic stewardship programs (ASP) in long-term care (LTC) settings is challenging. We present the results of an intervention intended to change the culture of antibiotic prescribing in 439 United States LTC facilities (LTCFs).

**Methods.** The LTC Safety Program assisted LTCFs with establishing and implementing ASPs from 12/2018 to 11/2019. Through webinars held 1–2 times per month and other educational content, the Safety Program emphasized 1) the science of safety to improve teamwork and identify antibiotic-associated harm and 2) clinical best practices in making antibiotic treatment decisions. Content was organized using the Four Moments of Antibiotic Decision Making Framework (Figure 1). All staff (e.g., physicians, nurses, nurse assistants) were encouraged to participate. LTCFs submitted monthly antibiotic days of therapy (DOT), numbers of new antibiotic starts, urine-culture (UCX) ordered, Claureidioides difficile LabID events and census data. Generalized linear mixed effects models were used to calculate pre-post intervention changes at bi-monthly intervals for antibiotic DOT, antibiotic starts and UCX, each per 1,000 resident-days (RD), and C. difficile LabID events per 10,000 RD, comparing the beginning (1/2019 and 2/2019) and end (11/2019 and 12/2019) of the Safety Program.

**Results.** Of the 105 ROSA, 46% had a mucoid phenotype. Results are summarized in the Table. Median modal TTD MICS read 0–1 dilution higher (IRD: 0–1) than BMD, CA and EA ranged from 64–93% and 63–86%, respectively. Single VMEs occurred for ATM (2.9%) and CAZ (4.2%). For CZA, 2 VMEs were observed and both were within EA. Major errors were ≤5% except for ATM (3.3%), MEM (3.3%), CZA (5.3% with adjusted ME 2.1%), and FEP (13%). Minor error rates were <10% except for TZIP CIP, LEV, TOB, and FEP (13–29%), for which majority of mIE were within EA (3/14, 11/16, 10/18, 13/19, 20/35, respectively). Performance was similar for non-mucoid and mucoid populations.

**Conclusion.** Etest methods performed well for most antibiotics against this challenging collection of RSA from CF patients. Laboratories should be cautious of mIE and ME that may occur with certain antibiotics. Furthermore, our observations suggest laboratories confirm CZA results for isolates with MICS near the breakpoint.