Background. The quadrivalent meningococcal conjugate vaccines do not target serogroup B meningococci (MenB), an important cause of meningitis and sepsis. MenB vaccines have been recently developed and licensed for infants and young adults. Serum bactericidal activity serves as an immunological index for evaluating the immunogenicity of vaccines. However, there is no standardized serum bactericidal assay (SBA) for MenB owing to difficulty in selecting target strains and complement sources. Using fetal bovine serum, we developed a new SBA by modifying a previous SBA for meningococcal serogroups A, C, W135, and Y and applied it to clinical samples.

Methods. An isolate from an invasive disease and three reference strains were used as the target strains, and the genotypes of the antigens contained in the MenB vaccine (4CMenB) (Bexsero; GlaxoSmithKline) were determined. Non-specific killing was assessed by using baby rabbit serum, fetal bovine serum, and healthy adult serum as complement sources. Serum was obtained from clinical samples of six healthy adults before and 1 month after 4CMenB immunization.

Results. The isolate and the three reference strains all contained factor H binding protein (fHBP) peptide type 1.1, which was consistent with the fHBP antigens contained in 4CMenB. The bactericidal activity in the serum (complement source) of healthy adults ranged from 53% to 90%. Non-specific killing in baby rabbit serum was greater than 80%. Considering the species specificity of meningococcal fHBP, non-specific killing (82% - 91%) was similar when human factor H was added. Non-specific killing in 20% vs. 6% of patients was associated with severity. Those with co-detection had mortality of 20% vs. 6%.

Conclusion. Detection of bacterial pathogens common to the respiratory microbiota by multiplex PCR in patients with influenza infection might predict the severity of illness, potential morbidity, and mortality. Further studies are needed to confirm the above findings.

1995. Implementation of Helicobacter pylori Stool Antigen Testing in a Large Metropolitan Centre: A Prospective Comparative Diagnostic Trial

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11. Diagnostics: Bacteria and Mycobacteria

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11. Diagnostics: Bacteria and Mycobacteria

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**Background.** Pulmonary nocardiosis is an infection targeting immunocompromised patients characterized by high mortality and requires nonfrontline antibiotics for treatment. Nocardiosis is currently confirmed or excluded by BAF fluid culture followed by further phenotypic identification steps. A culture-independent method with more timely results would accelerate the administration of appropriate treatment. A rapid Nocardia (NOC) PCR assay for BAL has not been previously validated nor offered for clinical testing to our knowledge.

**Methods.** Oligonucleotides for a rapid NOC PCR comprehensive of the causative agents of nocardiosis were aligned to the 165 regions of common NOC species and other others. Specificity was confirmed against publicly available bacterial 16S rRNA sequences. Rapid automated nucleic acid extraction (<1 hour for 24 samples) followed by fast PCR (<1 hour) was validated according to relevant compliance standards. Spiked/unspiked human BAF samples were used to assess analytical specificity, limit of detection (LOD), precision and accuracy using NOC and non-NOC strains.

**Results.** The NOC PCR detected, among others, the most common NOC species (N. cyriacigeorgica, N. nova, N. farcinica and N. brasiliensis). We estimate more than 95% of causative agents of nocardiosis are detectable by the assay. No cross-reactivity was detected from 30 non-NOC bacterial pathogens except for Rhodococcus and Crossiella spp. LOD in BAF fluid was determined to be 206, 41, and 26 copies/mL for N. cyriacigeorgica, N. nova, and N. transvalensis, respectively. Intra- and inter-assay precision studies revealed copies/mL CV's of <10% and <8% at a high concentration and <21% and <26% at a low concentration, respectively. Accuracy studies yielded 100% concordance with 33 BAF positives and 20 BAF negatives.

**Conclusion.** Specificity, inclusivity, sensitivity, precision and accuracy of a qualitative PCR have been deployed as an aid in the diagnosis of pulmonary nocardiosis. NOC PCR allows for a culture-independent method that can rapidly detect clinically relevant NOC species with an improved turnaround time, leading to prompt diagnosis and administration of appropriate treatment.

**Disclosures.** E. Smith, Viracor Eurofins Clinical Diagnostics: Employee, Salary. K. Baurhett, Viracor Eurofins Clinical Diagnostics: Employee, Salary. J. Grantham, Viracor Eurofins Clinical Diagnostics: Employee, Salary. N. Powell, 1987: Employee. Salary. M. Altrich, Viracor Eurofins Clinical Diagnostics: Employee. Salary. S. Klebboer, Viracor Eurofins Clinical Diagnostics: Employee. M. Wissel, Viracor Eurofins Clinical Diagnostics: Employee.

### Table 1. Yield by Year

| Year  | Total BC ordered | n | Contaminants | % | Mean FV (SD), mL |
|-------|------------------|---|--------------|---|-----------------|
| 2015  | 35,624           | 2.87 | 4.32 (0.26) |
| 2016  | 38,440           | 2.99 | 4.32 (1.30) |
| 2017  | 37,042           | 2.88 | 6.11 (0.98) |

**Conclusion.** BC FVs successfully increased with interventions implemented. While OY increased each year, an association between yield and FVs could not be determined due to small sample sizes. Further evaluation at quarterly intervals is ongoing and may help establish a correlation.

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

1998. Urine Culture Incubation Time: One vs. 2 Days

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**Background.** One day incubation time for non-invasive urine cultures makes the lab operation and workflow more efficient. However, it has been a matter of debate since striking a balance between contamination rates and a faster turnaround time for results weighs heavily over shorter incubation time. Our study at Sutter Health Shared Laboratory (SHSL) evaluated the possibility of significant loss of uropathogens, if cultures were incubated for only 1 day in CO2 and examined using a benchtop magnifier, and compared it with 2 days incubation.

**Methods.** Only routinely collected urine cultures has been included in this study and invasive collection such as nephrostomy, straight or diagnostic catheter collection were excluded. SHSL urine culture procedure defines the workup cut-off for uropathogenic organisms in routine culture at 100,000 CFU/mL. Total of 2,709 urine samples were processed using WASP automated plating system. 1 mL sterile loops were used to inoculate BAP/MAC bi-plates. Plates were incubated in 5% CO2 at 35°C for at least 18 hours and maximum 24 hours for the first day evaluation. All no-growth plates were examined with a regular bench top magnifier/light for evidence of growth, and if verified, they were incubated for an extra day of incubation. Organism identifications performed by Vitek MS instrument.

**Results.** Total of 501 out of 2,709 samples were determined as No-Growth on the first day examination, and after second day of incubation 435 stayed as No-Growth (86.8%), 66 samples (13.2%) indicate growth of normal Uro-Genital (UG) microflora, and no uropathogenic organisms detected. Among those with growth 54 (10.8%) samples grew <10K, 10 samples (2.0%) grew 10-50K, and 2 samples (0.4%) [95% CI: 0.1% - 1.5%] grew >50K CFU/mL of normal UG microbiota.

**Conclusion.** Although small percentage with low level urogenital microflora was missed on the first day of incubation, there were no uropathogenic organisms missed. Therefore, the 1-day incubation of routine urine culture plates in CO2, and careful examination of the plates appeared to have same efficiency of 2-day incubation in urine culture description. One-day incubation time for results can result in workforce efficiency, significant saving in labor and incubation space for large volume laboratories, or laboratories with total microbiology automation.

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