Background. Contaminated duodenoscopes used in endoscopic retrograde cholangiopancreatography (ERCP) have been implicated in carbapenem-resistant Enterobacteriaceae (CRE) outbreaks with high prevalences of CRE. Although inexpensive and readily available, CRE can be diagnosed using a rapid CRE screening rapid assay. This study reports our experience with a CRE screening assay.

Methods. We obtained 61 endoscopes from 11 facilities in 3 states between November 2016 and April 2017. Samples were cultured with four CRE screening rapid assays: the Vitek MS GN ChromID CRE, the BD Phoenix CRE ID Card, the ID4 LR CRE ID Card, and the BD Azoo Cobas CRE ID Card. The results of the CRE screening rapid assays were compared to the results of the Vitek MS GN ChromID CRE. The CRE screening rapid assays were also compared to the results of the Vitek GN ChromID CRE.

Results. Ninety-four percent of the samples were CRE positive by the CRE screening rapid assays. The CRE screening rapid assay that most reliably identified CRE was the Vitek MS GN ChromID CRE (98% sensitivity, 86% specificity). The CRE screening rapid assay that most reliably identified non-CRE was the BD Phoenix CRE ID Card (97% sensitivity, 82% specificity).

Conclusion. CRE screening rapid assays detect CRE at a high rate. CRE screening rapid assays are useful for differentiating CRE from non-CRE and for guiding further diagnostic testing.

Disclosures. All authors: No reported disclosures.

458. Rapid Detection of Invasive Mycobacterium chimaera Infection by Using a Novel Plasma-Based Next-Generation Sequencing Assay

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Background. Mycobacterium chimaera (Mc) can cause disease months or years after exposure. Mc infection clusters have been linked to contaminated heater-cooler devices (HCDs) used worldwide for temperature control during cardiac surgery. The current diagnostic test for Mc is acid-fast bacilli (AFB) culture which typically requires weeks, delaying confirmed diagnosis and possibly contributing to a high case fatality rate (CFR). We compared a novel plasma-based next-generation sequencing (NGS) assay with AFB culture for detection of Mc infection.

Methods. Mc cases were identified from February–April 2017 among patients with history of cardiac surgery performed at a Southern California hospital with known Mc exposure risk. A confirmed case was Mc infection identified by AFB culture; a probable case was MAC identified by AFB culture. AFB cultures from blood and biopsy samples were performed at the hospital laboratory. NGS assays on plasma were performed at an outside reference laboratory using an assay developed to detect cell-free pathogen DNA. Human DNA sequences were removed and pathogen reads were aligned against a reference-sequence database with a reportable range of >1,250 bacteria, fungi, protozoa, and viruses. Organisms present at a significance level above a predefined threshold were reported.

Results. Seven (6 confirmed and 1 probable) were identified. Six cases had invasive disease; 1 had localized wound infection. AFB cultures were positive in a median of 20 days (range: 6–43 days); whereas speciation to Mc required a median of 41 days (median range: 23–92 days) for specimen collection. NGS detected Mc in 5 of 6 cases (83%) with invasive disease in a median of 5 days (range: 2–6 days), and was negative in the single patient with localized infection.

Conclusion. This is the first reported detection of Mc by using a plasma-based NGS assay, which identified Mc approximately 15 days sooner than AFB culture positivity and 36 days sooner than speculation from AFB culture. Given widespread exposure to contaminated HCDs and the high CFR after infection, an urgent need exists for rapid, sensitive, non invasive assays to detect Mc. This NGS assay is a promising rapid diagnostic test for Mc and deserves further investigation.

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469. An Outbreak of Pseudomonas aeruginosa Infection in Coronary Artery Bypass Graft Patients Related to Endoscopic Vein Harvesting Equipment

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Methods. Multiple series of environmental sampling, solution and water system sampling, and patient-care equipment were performed at an outside reference laboratory using an assay developed to detect cell-free pathogen DNA. Human DNA sequences were removed and pathogen reads were aligned against a reference-sequence database with a reportable range of >1,250 bacteria, fungi, protozoa, and viruses. Organisms present at a significance level above a predefined threshold were reported.

Results. Seven (6 confirmed and 1 probable) were identified. Six cases had invasive disease; 1 had localized wound infection. AFB cultures were positive in a median of 20 days (range: 6–43 days); whereas speciation to Mc required a median of 41 days (median range: 23–92 days) for specimen collection. NGS detected Mc in 5 of 6 cases (83%) with invasive disease in a median of 5 days (range: 2–6 days), and was negative in the single patient with localized infection.

Conclusion. This is the first reported detection of Mc by using a plasma-based NGS assay, which identified Mc approximately 15 days sooner than AFB culture positivity and 36 days sooner than speculation from AFB culture. Given widespread exposure to contaminated HCDs and the high CFR after infection, an urgent need exists for rapid, sensitive, non invasive assays to detect Mc. This NGS assay is a promising rapid diagnostic test for Mc and deserves further investigation.

Disclosures. All authors: No reported disclosures.

460. The Burden of Acinetobacter baumannii in the Intensive Care Unit of a Teaching Hospital in Kuwait Over a 3-Year Period

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Background. Acinetobacter baumannii is often endemic in several ICUs worldwide. Once it is established, it is difficult to eradicate. This study was undertaken to