We conducted a retrospective before and after observational study and analyzed three microbial results is essential to enable early de-escalation of empiric therapy, managing severe infections, including bloodstream infections. Timely availability of rapid diagnostics + ASP intervention from January 2015 to July 2015, rapid diagnostics (AXDX in addition to conventional standard) with ASP intervention from January 2017 to March 2018.

**Results.** n = 280 patients met inclusion criteria and n = 225 (conventional microbiological diagnostics n = 74/conventional diagnostics + ASP intervention n = 79/ rapid diagnostics + ASP intervention n = 72) were included in the final analysis during the two study periods. There was no difference in clinical and demographic characteristics among the three groups. The use of AXDX significantly decreased time from positive blood culture to microbiorganism identification (ID) (median: 25 hours vs. 12.5 hours, P < 0.001) and susceptibility testing (AST) (median: 43.8 hours vs. 17.6 hours, P < 0.001) and improved time from Gram stain to optimal therapy (median: 20.1 hours vs. 7.7 hours, P < 0.01). ASP intervention alone without AXDX improved the proportion of patients on optimal therapy within 48 hours after Gram stain (62.2% vs. 77.3%, P < 0.05).

**Conclusion.** Use of AXDX significantly reduced time to ID and AST by 12.5/26.2 hours. In combination with ASP intervention AXDX significantly reduced time to optimal therapy by 13.1 hours, ASP intervention alone also improved the proportion of patients on optimal therapy within 48 hours.

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**2078. Adherence to Laboratory Screening Recommendations for Neonatal Herpes Simplex Virus Infection at a Tertiary Children's Hospital**

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**2079. The Relation Between Panel Reactive Antibody Assay and Cytomegalovirus Reactivation in Seropositive Solid Organ Transplantation Recipients**

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mismatch is a well-known risk factor of post-transplant (Tx) CMV reactivation. Recent laboratory advances for evaluating HLA mismatch can measure existence of donor-specific antibodies for single HLA allele; however, there was little evidence whether single panel reactive Ab (PRA) assay could predict CMV reactivation in SOT recipients.

**Methods.** We retrospectively analyzed pre-Tx HLA mismatch tests in total 300 of SOT recipients. All of them were CMV seropositive in donor and recipients and received regular blood CMV VL monitoring during 26 months after SOT. Lung (N = 83) and heart (N = 76) recipients received universal prophylaxis for 3 months, and kidney (N = 63) and liver (N = 78) received pre-emptive CMV therapy. The single PRA test for HLA class I/II was performed by bead-based immunoassay. The percentage of PRA was calculated by following formula: (the number of positive bead reactions; the number of beads in the assay) × 100. We categorized HLA-Ab specificity into two groups according to median fluorescent intensity (MFI) of bead; (1) strong with ≥10,000 of MFI, (2) not strong with <10,000. The calculated PRA was obtained from the frequency of HLA alleles in normal Korean population according to formula from U.S. Organ Procurement and Transplantation Network.

**Results.** The reactivator with ever ≥500 IU/mL of CMV had significantly higher positive percentage of HLA Class I screening test compared than nonreactor (33.8% vs. 16.6%, P = 0.004) but not class II (P = 0.085). The PRA and cPRA values only for HLA Class I were significantly lower in nonreactor (PRA, 0 [0–0%] vs. 0 [0–15%], P = 0.005; cPRA, 0 [0–15%] vs. 4.5 [0–41.5]% vs. 0.030), but not class II (PRA, P = 0.393; cPRA, P = 0.466). The percentage of strong MFI group for class I in nonreactivator was significantly lower than those in reactivator (7.1% vs. 28.8%, P = 0.028), but not class II (11.6% vs. 15.8%, P = 0.312). The maximal levels of CMV VL did not have any significant correlation to MFI values of Class I nor II.

**Conclusion.** Seropositive SOT recipients with strong PRA or cPRA values for HLA Class I in pre-Tx single PRA test had higher risk of CMV replication.

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

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2080. Impact of the Implementation of a Rapid Meningitis/Encephalitis Multiplex Polymerase Chain Reaction Panel on Clinical Outcomes: Multicenter, Retrospective Cohort of Adult and Pediatric Patients

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**Session:** 233. Diagnostics: Virology
**Saturday, October 6, 2018: 12:30 PM**

**Background.** Meningoencephalitis has a high mortality rate, therefore rapid identification of the underlying etiology is essential to optimize clinical and stewardship outcomes. The standard for diagnosis of meningoencephalitis included cerebrospinal fluid (CSF) culture and viral polymerase chain reaction (PCR) until approval of the BioFire Meningitis/Encephalitis (ME) panel, a multiplex PCR panel for the rapid detection of 14 central nervous system pathogens. The objective of this study was to determine the impact on clinical outcomes of the newly adopted ME panel in a central laboratory as compared with previously utilized CSF studies within a large, multicenter health system.

**Methods.** This is a multicenter, retrospective cohort study of adult and pediatric patients who received at least one dose of intravenous (IV) acyclovir for presumed meningoencephalitis, with study patients divided into pre-ME and post-ME panel cohorts. The primary endpoint is duration of IV acyclovir. Secondary endpoints include duration of antibiotics, in-hospital mortality, intensive care unit length of stay (ICU LOS), hospital LOS, rates of acute kidney injury and test-turnaround time (TAT). Subgroup analyses were performed analyzing the impact of number of daily couriers and distance from the central laboratory on TAT.

**Results.** A total of 208 patients were included: 87 pediatric and 121 adult. The duration of IV acyclovir decreased after implementation of the ME panel (41.6 vs. 30.8 hours; P = 0.01). The TAT was reduced with the implementation of the ME panel (37.3 ± 6.2 hours; P < 0.01). There were no significant differences in the remaining secondary outcomes. Subgroup analyses of the post-ME cohort showed that the number of daily couriers to the central laboratory and the distance from the central laboratory significantly impacted TAT (P < 0.01) but not duration of IV acyclovir.

**Conclusion.** The ME panel significantly reduced the duration of IV acyclovir and TAT, which could have cost and safety implications when applied to a larger patient population. Multicenter healthcare systems implementing the ME panel may consider on-site ME platforms at multiple sites due to the significant effect of a central laboratory on TAT.

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

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2081. Building a Decision Tree with Serial Serology Measurements Improves Classification in a Flavivirus Co-circulation Region

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**Session:** 233. Diagnostics: Virology
**Saturday, October 6, 2018: 12:30 PM**

**Background.** RT-PCR (reverse transcriptase polymerase chain reaction) is often considered the “gold standard” for diagnosis of Zika Virus (ZIKV) infection; however, it has been shown to have low sensitivity. A possible remedy is to study ZIKV-specific IgG (ZsIgG) and IgM (ZsIgM) antibodies. However, the in vitro cross-reactivities of Dengue virus (DENV) and ZIKV-specific antibodies are well known, leading to diagnostic difficulties in an area with co-circulation of the two viruses. Our goal was to use Zika and Dengue serologic assays to build a classification model that improves upon the PPV of commercial kits while maintaining sensitivity.

**Methods.** We conducted a prospective longitudinal study in Southern Mexico where DENV and ZIKV co-circulation occurs (NCT02831699). Patients were included in two cohorts: a cohort of subjects presenting with a febrile rash meeting WHO/PAHO Zika case definition and a household cohort. After signed consent, all subjects enrolled were evaluated on study-visit Days 0, 3 and 7 (for fever rash cohort) and 28. We considered a subject “true positive” for ZIKV or DENV if RT-PCR positive at any time point. The healthy household cohort (with no positive RT-PCR) was considered “true negative”.

**Results.** A total of 208 subjects were included: 87 pediatric and 121 adult. The duration of IV acyclovir decreased after implementation of the ME panel (41.6 vs. 30.8 hours; P = 0.01). The TAT was reduced with the implementation of the ME panel (37.3 ± 6.2 hours; P < 0.01). There were no significant differences in the remaining secondary outcomes. Subgroup analyses of the post-ME cohort showed that the number of daily couriers to the central laboratory and the distance from the central laboratory significantly impacted TAT (P < 0.01) but not duration of IV acyclovir.

**Conclusion.** The ME panel significantly reduced the duration of IV acyclovir and TAT, which could have cost and safety implications when applied to a larger patient population. Multicenter healthcare systems implementing the ME panel may consider on-site ME platforms at multiple sites due to the significant effect of a central laboratory on TAT.

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