

implemented in Alberta in June 2019. As a result, more SCID patients will be diagnosed earlier in their course, and therefore prior to most routine vaccinations. However, newborn screening will not pick up some types of combined immune deficiencies. Some children may still be at risk of vaccine-associated illnesses due to undiagnosed underlying immune deficiencies.

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Poster Presentation

Procalcitonin Use in a Large Community Healthcare System

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Background: Appropriate testing of blood procalcitonin (PCT) can potentially inform antibiotic de-escalation in patients with severe infections. When used along with observed clinical improvements, PCT testing can support antimicrobial stewardship. However, this testing must be used optimally to ensure that it is actionable, cost-effective, and provides patient benefit. Although this test is widely used, little is known about the appropriateness of this testing in select populations.

Methods: In this retrospective review, we evaluated PCT monitoring patterns and appropriateness of use and relationship to antibiotic days of therapy in a system of community hospitals. We evaluated the use of PCT testing in patients with known confounders, namely pregnancy, chronic kidney disease, or neutropenia, which we classified as “inappropriate use” because these conditions can affect the interpretation of PCT results. We also evaluated the relationship between PCT testing and antibiotic days of therapy for patients with sepsis, pneumonia, or lower respiratory tract infections. **Results:** In a 1-year period, ~206,302 PCT tests were performed at 146 facilities, an average of ~1,413 per facility per year. Approximately 27.7% of these tests were given to patients who were pregnant or had a confounding comorbidity such as chronic kidney disease or neutropenia. Of these “inappropriate” tests, >90% were given to patients with chronic kidney disease. Older patients (aged 60–80 years, n = 93,021) were more likely to receive a PCT test while also having a confounding comorbidities; 24% of older patients with a PCT test also had chronic kidney disease. Of all patients with a PCT test and chronic kidney disease, ~76% were also diagnosed with either sepsis, pneumonia, or lower respiratory tract infections. **Conclusions:** Confounding conditions can affect PCT levels independently of infection. Additionally, some clinicians use PCT tests as probes for other physiological maladies. This analysis demonstrated that there is opportunity for education about the appropriate use of this test, how to interpret results in the presence of confounding conditions, and how to transform PCT test results into actions that facilitate antimicrobial stewardship and better patient care.

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Process Surveillance and Follow-Up Monitoring to Increase Compliance to Standards in Medical Device Reprocessing

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Background: Effective medical device reprocessing (MDR) is essential in preventing the spread of microorganisms and maintaining patient safety. Alberta Health Services (AHS) is an Alberta-wide, integrated health system, responsible for delivering health services to >4.3 million people living in the province. In 2010, periodic province-wide MDR reviews were initiated by the provincial health system to verify that the cleaning, disinfection, and sterilization of reusable critical and semicritical medical devices met established standards. To date, there have been 3 review cycles; in cycle 3, a follow-up process for tracking and reporting corrective actions was initiated. **Methods:** As in previous MDR review cycles, cycle 3 included the use of a standardized suite of tools to measure compliance with standards set by Accreditation Canada, the Canadian Standards Association, and the Government of Alberta. Each cycle involved a review of MDR areas completed by trained reviewers. Interrater reliability among reviewers was maintained through training and debriefings following reviews to ensure agreement. Following reviews, reports were generated for areas, zones, and AHS. As part of the corrective actions and follow-up process, identified deficiencies were categorized into 5 themes. Corrective actions were tracked and periodic reports were generated showing the progress of deficiency resolution. Resolution rates (number of resolved deficiencies divided by total number of deficiencies) were calculated for each of the identified themes as well as overall for cycle 3. **Results:** Overall compliance for cycle 3 was 93%. Cycle 3 reviews revealed that more than half of the deficiencies (58%) were identified previously in cycle 2. The resolution rates ranged from 78% to 95% for identified deficiencies for 4 of the 5 themes: documentation, technique, PPE/attire/hand hygiene, and other. The theme related to physical infrastructure showed a considerably lower resolution rate of 49%. The corrective action follow-up process showed increased overall resolution rate from 59% at the start of the follow-up process to 82% at its completion. When this resolution rate was applied to the initial survey compliance rate for cycle 3, overall compliance increased to 99%. **Conclusions:** Monitoring quality of MDR practices is essential in maintaining and improving patient safety. The standardized provincial review process identified common themes and a coordinated approach to support the resolution of many identified deficiencies. Most of those deficiencies were resolved; however, those deficiencies related to physical infrastructure of the MDR department continue to be seen across review cycles. This review process with follow up of these deficiencies can help bring attention to organization leadership and

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Proficiency Testing Performances Analysis of Microbiology Laboratories Participating in Cambodia Antimicrobial Resistance (AMR) Surveillance System

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