We present an evaluation of the AusDiagnostics Faecal Pathogens M (16-well) PCR assay (AusDiagnostics) against another commercial multiplex PCR assay, the BioFire FilmArray GI Panel (bioMérieux). Each assay was performed in accordance with the manufacturer's instructions. The results of each assay were compared to existing laboratory methods, including culture, rapid antigen and in-house PCR assays.

Both assays exhibited high positive and negative percent agreements ($\geq 96\%$). The AusDiagnostics Faecal Pathogens M (16-well) PCR assay can be used within a high throughput clinical laboratory setting whereas the BioFire FilmArray GI Panel is suited to low-volume or urgent clinical settings. By having a broader spectrum of detectable pathogens, syndromic multiplex PCR tests can deliver improved support for clinicians in the diagnosis and management of gastrointestinal infections.

EPIDEMIOLOGY, CLINICAL FEATURES AND LABORATORY TESTING OF *NEISSERIA GONORRHOEAE* INFECTIONS IN THE AUSTRALIAN CAPITAL TERRITORY IN 2014–2018

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Gonorrhoea is most commonly diagnosed by nucleic acid amplification tests (NAATs), however culture remains important for providing information on antimicrobial susceptibilities. This study describes the epidemiology of gonorrhoea in the Australian Capital Territory (ACT), clinician compliance with the performance of culture, and sensitivity of culture relative to NAAT. Positive *Neisseria gonorrhoeae* NAATs and culture and demographic information were identified from the ACT public pathology laboratory information system for a 5-year period (2014–2018). NAAT positive cases were reviewed to determine if a specimen had also been taken for culture. Repeat detection of *N. gonorrhoeae* from one or more sites within a 29-day period were regarded as a single episode.

917 episodes of *N. gonorrhoeae* involving 1,233 positive NAATs/cultures from urogenital (30%), throat (37%), anal (32%) and other sites (0.4%) were observed; 89% in males. An increase in number of episodes and test positivity rate were observed over time. 81% of NAAT positive specimens had culture performed, of which 64% isolated *N. gonorrhoeae*. Culture positivity was poorest for throat (57%), anal (65%), and vaginal (54%) specimens.

Until other methods of detecting antimicrobial resistance are available, clinicians should be targeted to collect appropriate specimens for culture to inform treatment and surveillance.

PARACOCCLUS YEEI – AN EMERGING PATHOGEN OR INCIDENTAL FINDING?

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Paracoccus yeei is an aerobic Gram-negative coccobacilli that is found in soil. There are increasing reports of infection in the literature. The organism can appear under-decolourised on Gram-stain and thus be inadvertently reported or dismissed as a Gram-positive cocci. We report two cases of identification of the organism in our laboratory and the associated clinical findings. The first case is of a 5-month-old girl with unilateral ulcerating groin crease lesions who cultured *P. yeei* in blood culture, identified on MALDI-TOF-MS. Treatment in this case was directed at a *Pseudomonas aeruginosa* cultured from the wound, although Gram-positive cocci seen on the Gram-stain of the wound were never cultured. The second case is a 49-year-old woman with *P. yeei* cultured from a left knee joint aspirate with a polymorph count of $16,500 \times 10^6/L$, again identified on MALDI-TOF-MS. In this case, no directed treatment was administered. Identification of *P. yeei* may be increasing due to inclusion in the database of rapid microbiological identification systems such as the MALDI-TOF-MS and automated biochemical systems such as the VITEK-2 GN cards. Ongoing case publication is required to elucidate the prevalence and pathogenicity of this organism.

A CASE OF *PSYCHROBACTER SANGUINIS* BACTEREMIA IN A MIDDLE-AGED MAN

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Psychrobacter sanguinis is a Gram-negative obligate aerobe first identified in 2012. *Psychrobacter* species are cold-tolerant and often associated with marine environments.¹ They are known to cause opportunistic infections. Here, we report the first known case of *Psychrobacter sanguinis* bacteremia in Singapore in a middle-aged man with no known exposure to seawater or seafood. The organism was initially identified by MALDI-TOF, and confirmed with 16S rRNA sequencing. We also describe further phenotypic studies of this isolate. The patient was admitted with fever, marked hyponatremia, rhabdomyolysis, and altered mental state, and his condition improved with IV ceftriaxone.

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EPIDEMIOLOGY OF CULTURE-POSITIVE MUCORMYCOSIS IN QUEENSLAND: 2013–2018

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Mucormycosis is an uncommon, but serious, invasive mould infection associated with rapid progression and high morbidity and mortality. Infection can occur in a broad range of hosts,

including the immunocompetent. This retrospective observational study of culture-positive proven and probable cases between November 2013 and November 2018 identified a total of 48 cases (34 proven and 14 probable) out of 215 patients with positive cultures.

Rhizopus spp. were the most common aetiology (22, 45.8% of cases). Patients who sustained trauma were most likely to have non-*Rhizopus* species as were patients from outside south-East Queensland. *Saksena* spp. infection were most commonly associated with trauma, cutaneous infection and with residence in tropical regions. Haematological malignancy, diabetes and trauma were the most common risk factors. Disseminated infection was rare (4%) though extensive localised spread was common in those with both cutaneous and rhino-orbital-cerebral manifestations (ROCM).

The 30-day and 1-year mortality were 17% and 33.33% respectively. The strongest predictors of mortality were rhino-orbital-cerebral site of infection (OR 11.67, $p=0.01$, CI 2.05–66.41), diabetes mellitus (OR 4.2, $p=0.04$, CI 1.06–16.58) and haematological malignancy (OR 5, $p=0.02$, CI 1.38–21.21). The strongest factor associated with survival was cutaneous site of infection (OR 0.15, $p=0.01$, CI 0.04–0.59).

CHOLERA RISK FACTORS, PAPUA NEW GUINEA, 2010

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Background: The study was conducted during an outbreak of cholera in Lae, Papua New Guinea, beginning in August 2009. Cholera was seen as a new or emerging disease in the context of Papua New Guinea (PNG) as it was unknown prior to the outbreak.

Aim: The aim of the study was to identify risks factors in order to control and prevent further spread of the disease and to evaluate point of care test for cholera.

Method: This study was a hospital based case-control study conducted at Angau Memorial Hospital, Lae, PNG. The study subjects included 176 participants (54 cases and 122 controls), selected according to prescribed selection protocols. The information was collected in the form of a questionnaire/s. Stool culture was a standard method used in this study.

Results: The major independent risk factors noted were: mobile population above the age of 20 years, defecating in open air, rivers or streams, contacts who have travelled to affected areas. Of note, hand washing with soap was protective to individuals connected to piped running water.

Conclusion: It was concluded that access to safe and clean water and improved sanitation were likely to limit the spread of cholera in the communities.

Mobile population and settlement dwellers were high risks factors associated with the spread of cholera.

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INTERNAL VERIFICATION OF BD BACTEC FX40 INSTRUMENT FOR RAPID DETECTION OF BLOODSTREAM INFECTIONS

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Aim: The BD BACTEC FX40 automated instrument was evaluated for use by Ballarat Australian Clinical Laboratory (ACL) to aid in the detection of blood stream infections.

Method: 20 organisms were chosen from the reference culture collection to be inoculated into two aerobic, two anaerobic and two paediatric blood culture bottles filled with designated volume of human blood. For each organism, 50 µL of the recommended dilution was aseptically added for each bottle with 5 mL of normal saline in each dilution tubes. There were 12 control bottles injected with sterile water. All bottles were loaded into the instrument. Bottles were removed as they flagged positive. A gram stain and culture were performed on each bottle that flagged positive. Identification by standard laboratory procedures was performed on all isolates.

Result: All bottles that were expected to flag positive, flagged positive within the specified time frame listed. The time to detection for each bottle type with the organisms seeded into the blood culture bottles was recorded.

Conclusion: All predicted positive blood culture bottles flagged positive except *Streptococcus pneumonia* in the anaerobic bottle. Controls remained negative. BACTEC FX40 instrument was fit for purpose given that it demonstrated acceptable agreement with inoculated organisms and culture.

APPLICATION OF SINGLE PLATFORM METAGENOMICS SEQUENCING ALONGSIDE CONVENTIONAL TESTING FOR TWO ADULT CASES OF CENTRAL NERVOUS SYSTEM (CNS) INFECTION

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