S04 – THE IMPACT OF ADVANCES IN DIAGNOSTIC TECHNOLOGY ON POLICY, PROGRAM AND PRACTICE (ISSTDR SPECIAL SYMPOSIUM)

Monday, July 15, 2019 10:45 AM – 12:15 PM

S04.1 RESISTANCE-GUIDED THERAPY FOR *M. GENITALIUM*: IMPACT OF DIAGNOSTIC RESISTANCE ASSAYS ON PRACTICE AND POLICY

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Mycoplasma genitalium (MG) has developed resistance to macrolides that currently exceeds 50% in most nations and quinolone-resistance, particularly in the Western Pacific region is increasingly being reported. Widespread use of azithromycin in the management of STI syndromes, chlamydia and gonorrhoea has contributed to the emergence and spread of macrolide-resistant MG globally. Diagnostic assays that incorporate macrolide resistance markers have recently been developed and provide an opportunity to reduce the use of azithromycin and individualise therapy. This talk will focus on the impact of the first generation of diagnostic resistance assays for MG on microbial cure and de novo resistance. It will review their utility in clinical algorithms in an STI setting and their impact on practice and policy. Macrolide resistance mutations are well described and result in high level resistance and failure of azithromycin making them highly suitable candidates for resistance assays. However markers of quinolone resistance, needed for the development of the next generation of resistance assays, have been harder to define and correlate with treatment outcomes.

Disclosure No significant relationships.

S04.2 POINT OF CARE AND HOME TESTING OPPORTUNITIES: IMPLICATIONS FOR QUALITY PUBLIC HEALTH PRACTICE

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Chlamydia (CT) and gonorrhea (GC) are the two most commonly reported notifiable diseases in the United States and case reports have been increasing in recent years. New technology may soon allow individuals to test themselves for CT and GC, either at home, or in a clinic or physician's office. This presents both challenges and opportunities for public health practice. This presentation will cover a range of implications of point of care and home testing, including for testing, for treatment of index patients and partners, for surveillance, and for reaching priority populations. Data on acceptability of such tests among priority populations, including men who have sex with men and young adults, as well as among physicians from a variety of disciplines, will also be presented.

Disclosure No significant relationships.

S04.3 HOME BASED TESTING: UNINTENDED CONSEQUENCES AND IMPLICATIONS FOR ANTIMICROBIAL STEWARDSHIP – SHOULD WE BE CONCERNED?

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The ability to increase access to STI and HIV diagnoses and treatment through home testing has been demonstrated to be both acceptable and popular and should herald a bright future. But the lack of appropriate regulation and the financial imperative for commercial organisations of profitability is having a number of unintended consequences. 1) How is the data being shared with public health, which produces population STI and HIV statistics? Failure to integrate all sources will result in an incomplete picture affecting public health priorities. 2) In the United Kingdom a number of on-line providers are offering premium multi-plex testing and in some cases individual NAAT testing for *Ureaplasma urealyticum*, *Mycoplasma hominis*, *Mycoplasma genitalium* and *Gardnerella vaginosis* for which there is a) no evidence that detecting and treating them in asymptomatic individuals does more good than harm *and/or* b) no association with disease at low load. Companies may refer patients to Wikipedia for information or develop their own with misleading statements such as 'If Ureaplasma infection is left untreated, there is an increased risk of getting other STIs, including HIV… In women there is also an increased likelihood of infertility if there is a prolonged Ureaplasma infection.' This results in over-diagnosis, unnecessary patient anxiety and inappropriate antimicrobial therapy increasing the risk of antimicrobial resistance to tetracycline, macrolides and metronidazole. 3) The performance of these multi-plex assays is also unclear. Which is of relevance in the diagnosis and treatment of chlamydia, gonorrhoea, trichomonas and *M. genitalium* which has implications for patients and public health STI control programmes. Should we be concerned and if so what needs to be done? We need regulation fit for purpose with mandatory sharing of anonymised data and governance from national/international expert bodies on STIs and HIV – but who will take ownership of this and fund it?

Disclosure No significant relationships.

S04.4 IMPLEMENTING MOLECULAR TESTING TO PREDICT *NEISSERIA GONORRHOEAE* SUSCEPTIBILITY IN CLINICAL PRACTICE

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Neisseria gonorrhoeae is the second most common reported sexually transmitted infection in the United States. Globally there have been increasing reports of antimicrobial resistant infections. In order reduce the direct selection pressure of a single treatment regimen on *Neisseria gonorrhoeae*, it might be beneficial to use different treatments. Recent advances in molecular biology allow for the prediction of antimicrobial susceptibility in bacteria based on short DNA sequence patterns in certain genes associated with resistance. In 2015, we introduced the routine use of a molecular GyrA assay to predict ciprofloxacin susceptibility in *Neisseria gonorrhoeae*