Newsletter 26 (August 2011)

This newsletter contains a number of additions and modifications to the CDS Method which have been made in the last 8 months. Some of the changes were made because of changes in clinical or laboratory practice, others were in response to suggestions from CDS users during the year or at the Annual CDS Workshop at the ASM meeting in Hobart. The changes will be incorporated in the 6th edition of the Manual (in preparation) including the on-line and the pdf version on the CDS website. They are:

1. *Revised Interpretation of Testing Streptococci and cefotaxime/ceftriaxone :* The interpretation of the results of testing of *Streptococcus pneumoniae* from sites other than CSF and other streptococci including strains of the *Streptococcus milleri* group (*S. anginosus*, *S. constellatus*, *S. intermedius*) against cefotaxime/ceftriaxone 0.5 µg discs has been revised. The cut off zone size is 4 mm annular radius and the susceptible breakpoint is ≤ 0.5 mg/L.

2. *Decreased Susceptibility (DS) Report:* Although an Intermediate category of susceptibility is generally not accepted in the CDS Test there are a few occasions where it is useful to distinguish between those isolates that are not fully susceptible to a particular agent. Previously we referred to these isolates as having a Reduced Susceptibility (RS) but as some found this term confusing we have adopted the term Decreased Susceptibility (DS) that is used in reporting ceftriaxone susceptibility for *Neisseria gonorrhoeae*.

3. *Surrogate Testing of Augmentin:* As requested by some members of the CDS Users Group, the surrogate reporting of Augmentin for *Streptococcus pneumoniae* from sites other than CSF will be included in Table 10.2.a.

4. *Amendment to Table 10.4.:* With *Serratia marcescens* read T (tested) for Tazocin instead of R; *Aeromonas sobria* will be replaced by *A. sobria/veronii* and with *Proteus vulgaris/penneri,* aztreonam should be tested (T) and the susceptibility reported.

5. *Use of an ampicillin and a cephalexin disc:* We recommend to test in parallel ampicillin 25 µg and cephalexin 100 µg *Acinetobacter* species and members of the Enterobacteriaceae. Organisms producing chromosomal AmpC β-lactamase are obviously resistant to cephalexin 100 µg but may yield a zone around 6 mm with ampicillin. These strains should be reported as resistant to ampicillin.

6. *Detection of Decreased Susceptibility to fluoroquinolones:* We recommend the testing of all coliforms isolated from blood culture including *Salmonella* sp. and *E. coli* with nalidixic acid 30 µg as well as ciprofloxacin 2.5 µg to detect a decreased susceptibility to the fluoroquinolone of the isolates.

7. *Testing Salmonella sp. against azithromycin: Salmonella typhi* and other *Salmonella* species isolated from blood culture have been calibrated in the CDS using an azithromycin 15 µg disc. The Australian Antibiotic Guidelines recommend azithromycin as the treatment of choice for *Salmonella typhi*. Although it is surprisingly high we have tentatively accepted a susceptible breakpoint of 16 mg/L as this is based on clinical outcome and *in vitro* testing reported in the literature (Buttler et al., 1999, JAC, 44, 243-250; Capoor et al., JMM 2007, 57, 1490-1494). The cut off of the annular radius for susceptible strains is 4 mm. The acceptable range obtained with *E. coli* ACM 5185 is 5.4 – 7.0 mm.

8. *Unusual MRSA isolat*e: We recently came across an MRSA isolate with a FOX 10 zone of approximately 6mm. The strain was *mecA* gene positive by PCR testing. CDS Users are reminded that *mecA* gene negative strains i.e. MSSA always have a zone of ≥ 7 mm. Therefore, a coagulase positive staphylococcus with a FOX 10 zone of less than 7 mm may belong to this group of low resistance MRSA. Please forward the isolate to us for PCR confirmation. In the meantime, you can either withhold the results or send the results out as “probable MRSA awaiting PCR confirmation”.

9. *Klebsiella pneumoniae carbapenemase (KPCs):* Although KPC producing *K. pneumoniae* have been reported over the last few years in Europe and USA, the first strain isolated in Australia was reported in September 2010. KPCs are essentially “super” ESBLs of Bush group 2 (Ambler class A) plasmid mediated β-lactamases and hydrolyse all β-lactam antibiotics including the carbapenems. Although inhibited by clavulanic acid and sulbactam, the enzyme is very efficient and affects all β-lactams including Timentin, Augmentin and Tazocin, see Power points 2011.

10. *High level aminoglycoside resistance in E. faecalis:* All enterococci are known to be resistant to the aminoglycosides and all isolates would have a zone < 6mm with a gentamicin 10 ug disc (CN 10). Therefore enterococci are not calibrated against CN 10. However CN 200 and S 300 discs have been calibrated in the CDS to detect high level resistance to these aminoglycosides in isolates of *E. faecalis* from blood cultures in patients with suspected endocarditis caused. If the isolate does not have high level resistance, gentamicin or streptomycin may used to provide synergy to ampicillin. Note that the high level resistance is mediated by a different mechanism in each of the two aminoglycosides therefore if needs be both should be tested.

11. *Apramycin zone:* Please note that the 4 mm cut off in annular radius of aminoglycosides with the Gram-negative isolates applies to all aminoglycosides including apramycin that is used in veterinary medicine.

12. *Confirmation of MBLs using EDTA discs*: When using EDTA discs to perform MBL confirmatory testing it is necessary to include an aztreonam 30 µg disc (ATM 30). As aztreonam is not affected by MBL an MBL producer will be susceptible to ATM 30 unless it also expresses an ESBL. The co-presence of an MBL and an ESBL can be clearly demonstrated in members of the Enterobacteriaceae by the resistance to ATM 30 and the synergy observed between ATM 30 and an adjacent ACM 60 disc, see power points 2011.
    With *Pseudomonas aeruginosa*, some isolates may show a non-specific synergy between EDTA and a beta-lactam disc including ATM 30 that does not indicate the presence of an MBL (see power points 2009).