## Attachment 3: Definition of Multi-Drug Resistant Pathogens Requiring Contact Isolation

Patients colonized or infected with resistant pathogens (as specified below) will be placed on Contact Precautions. All employees should perform hand hygiene prior to entering the room and after removing gloves/prior to leaving the room. Contact Precautions may be required for other antibiotic resistant organisms at the discretion of Infection Prevention or the attending physician.

**Definitions of MDR Pathogens Requiring Contact Isolation**

1. MRSA (resistant to oxacillin or methicillin)
2. VRE – *E. faececium* and *E. facecalis* (resistant to vancomycin)
3. *E. coli, Proteus, Serratia, Klebsiella, Enterobacter, Providencia,* other *Enterobacteriaceae*
   - Resistant to at least one drug in 3 of the following classes:
     - Extended spectrum cephalosporins (cefepime, ceftazidime, cefotaxime, ceftriaxone)
     - Fluoroquinolones (ciprofloxacin, levofloxacin, moxifloxacin)
     - Aminoglycosides (gentamicin, tobramycin, amikacin)
     - Carbapenems (imipenem, meropenem, doripenem, ertapenem)
     - Piperacillin/tazobactam
4. *Pseudomonas aeruginosa*
   - Resistant to at least one drug in 3 of the following classes:
     - Extended spectrum cephalosporins (cefepime, ceftazidime)
     - Fluoroquinolones (ciprofloxacin, levofloxacin)
     - Aminoglycosides (gentamicin, tobramycin, amikacin)
     - Carbapenems (imipenem, meropenem, doripenem, ertapenem)
     - Piperacillin/tazobactam
5. *Acinetobacter baumannii*
   - Resistant to at least one drug in 3 of the following classes:
     - Extended spectrum cephalosporins (cefepime, ceftazidime)
     - Fluoroquinolones (ciprofloxacin, levofloxacin)
     - Aminoglycosides (gentamicin, tobramycin, amikacin)
     - Carbapenems (imipenem, meropenem, doripenem, ertapenem)
     - Piperacillin/tazobactam
     - Ampicillin/sulbactam
6. CRE are defined as:

   Enterobacteriaceae (only *E.coli*, Klebsiella species, and Enterobacter species)
   - Resistant to one of the following carbapenems: doripenem, meropenem, imipenem, or ertapenem

     **OR**
   - Documented to produce carbapenemase **OR**
   - Positive for carbapenemase genetic determinants by molecular methods

     **OR**

   Enterobacteriaceae spp. other than Enterobacter spp., E.coli or Klebsiella spp.,
   - Documented to produce carbapenemase **OR**
   - Positive for carbapenemase genetic determinants by molecular methods excluding KPC*

     ** KPC is endemic to NC and more treatable (i.e., several new antibiotics cover KPC pathogens)*

Caveats

- Treat “intermediate” as “resistant” except in the case of CRE (see above)
- We will not classify *S.maltophilia* as a multidrug resistant pathogen based on susceptibilities given how few antibiotics are tested and because outbreaks are rare.
- Consider expanding CRE classification to all Enterobactericae organisms in an outbreak setting for the purpose of decision making for cohorting patients (e.g., CR Klebsiella and CR Serratia would be cohorted together).

Comments:

- Clinical impact of MDRO Gram negative pathogens decreased by the availability of newer antibiotics that can treat CRE (ceftazidime-avibactam, ceftolazone-tazobactam, meropenem-vaborbactam, impenem-relababactam, cefiderocol), MDR-*P. aerug*inosa (impenem-relabactam, cefiderocol), MDR-*Acinetobacter* (cefiderocol), and *Stenotrophomonas maltophilia* (cefiderocol)

References

1. Sievert DM, et al. Antimicrobial-resistant pathogens associated with healthcare-associated infections: Summary of data reported to the National Healthcare Safety Network at the Centers for Disease Control and Prevention, 2009-2010. Infect Control Hosp Epidemiol 2013;34:1-14 (Table 8)
2. Centers for Disease Control and Prevention. Facility Guidance for Control of Carbapenem-resistant Enterobacteriaceae (CRE). November 2015 Update – CRE Toolkit. https://www.cdc.gov/hai/pdfs/cre/CRE-guidance-508.pdf Accessed June 6, 2018.