Effective Wednesday, June 22, 2016, we will be transitioning to EXTENDED infusion administration of piperacillin/tazobactam (Zosyn) as the preferred dosing strategy for adult patients at UCSF Health.

**What is EXTENDED infusion piperacillin/tazobactam?**

The purpose of EXTENDED infusion piperacillin/tazobactam is to maximize clinical efficacy based on pharmacodynamics, allowing for less frequent dosing intervals and cost savings.

![Graph showing concentration levels over time for short and extended infusions](image)

The dosing for EXTENDED infusion piperacillin/tazobactam includes a 4.5gm loading dose given over 30 minutes, followed 4 hours later by 4.5gm every 8 hours administered over 4 hours.

**Who should NOT get EXTENDED infusion?**

SHORT infusion (over 30 minutes) piperacillin/tazobactam should be used in the following patients:

- Pediatric patients admitted to Benioff Children’s Hospital
- Patients with creatinine clearance of <20ml/min, not on continuous renal replacement therapy
- Patients on intermittent hemodialysis (iHD). Note that patients on continuous renal replacement therapy (CRRT) should get EXTENDED infusion dosing unless meeting other exclusion criteria.
✔ Patients stationed in the emergency department, operating room, peri-procedural, or post anesthesia care units
✔ Patients with insufficient intravenous access
✔ Patients with cystic fibrosis

Consult with Infectious Diseases or Antimicrobial Stewardship for consideration of alternative therapies for:

✔ Patients with infection or colonization with gram-negative bacteria intermediate or resistant to piperacillin/tazobactam within the last 60 days

**How do I order EXTENDED infusion?**

1. Piperacillin/tazobactam will now be ordered using an order panel that contains selections for LOADING dose, EXTENDED infusion, and SHORT infusion.

2. Determine if the patient is eligible for piperacillin/tazobactam EXTENDED infusion by reviewing the exclusions above.

3. If the patient is NOT eligible for EXTENDED infusion, select SHORT infusion with appropriate dose for renal function.
   - Note: You will need to de-select LOADING dose and EXTENDED infusion.

4. If your patient is eligible for EXTENDED infusion, LOADING dose and EXTENDED infusion are automatically selected:
   - a) Decision support information on the left tool bar will provide the time of most recent piperacillin/tazobactam administration, as shown.
   - b) If the patient has NOT received a SHORT infusion within 6 hours or an EXTENDED infusion that was started within 10 hours, order a LOADING dose.
   - c) If the patient has received a SHORT infusion within 6 hours or an EXTENDED infusion started within 10 hours, de-select LOADING dose.
   - d) Please consult with a clinical pharmacist in the case of a patient previously on EXTENDED infusion with the last dose started between 10 and 14 hours.