Injectable Calcium Shortage Memo- adult hospitals

What? Due to critical shortage for injectable calcium, the following conservation plan will be implemented:

1. Conservation plan is dependent upon ionized calcium level due to the problematic nature of total calcium interpretation. No IV supplementation will be dispensed without ionized calcium level. Pharmacist may order the ionized calcium level if one is not present. Exception: patients with signs/symptoms consistent with tetany.

2. Conservation to minimum amount in adult TPN solutions, with the intent to keep ionized calcium within low normal range. (1 mmoles/L). This may be done with hybrid TPN/Clinimix combos, if possible, since Clinimix contains 4.5 mEq/L of calcium.

3. Conservation of calcium gluconate IV boluses:

- Patients able to take medication orally (including NPO patients taking oral meds) if ionized Calcium >1 mmoles/L. – pharmacist will contact physician to discuss plan for oral calcium supplementation (suggestions listed below) If serum ionized Calcium <1 mmoles/L, IV supplementation will occur by (4) below.

- Oral supplementation suggestions
  - Calcium carbonate po 500 mg bid to qid
  - Vitamin D, 200 international units po daily (in addition to calcium)

- Patients without ability for oral access of medication, regardless of floor status, and patients who have adverse reactions to documented oral calcium supplementation will receive either IV calcium gluconate or calcium chloride boluses (depending on supply) as per protocol below. Preferences will be given for calcium gluconate for patients without central lines (if supplies exist).

4. Standard IV bolus protocol – the following standard solutions will be used for IV bolus supplementation, as to maximize reuse of any possible returned medication, and to maximize effectiveness of the IV route.

- Calcium gluconate 1 gram (2.4 mmoles calcium) IV x1 to infuse over 12 hours.
- Calcium chloride 350 mg (2.4 mmoles calcium) IV x1 to infuse over 12 hours
- Please note that doses may be given over a shorter time period if severe symptomatic hypocalcaemia (<1 mg/dL) or if the physician deems it necessary to the treatment plan.
- It is suggested to repeat an ionized calcium level at least twelve hours after bolus is completed.
- In the absence of either calcium gluconate or calcium chloride salt, pharmacists will automatically interchange to the remaining form after review of the patient electrolyte profile. Pharmacist will contact prescribers for discussion if patient chloride > 115 if calcium chloride is to be used.

5. Stocking changes: Due to the critical shortage, operational changes including reduction in par/removal from EH carts and/or procedural trays/boxes may be implemented in the future. Further communication will be distributed if this is needed in the future.

When: Effective Immediately, April 14, 2015

Why: Calcium gluconate and calcium chloride injection are on national shortage due to multiple reasons including manufacturing delays and increased demand. Due to the national shortage, supply at Methodist has become critical, warranting implementation of the above shortage plan.

Reference: Current drug shortages. Calcium chloride and calcium gluconate shortage. ASHP website. Accessed April 13, 2015

Above action plan 1-4 approved by P&T/MEC in September 2011.