Pharmacy Shortages – January 15, 2014 (Updated monthly, if not more often)

Dear Colleagues,

Below and the following link [http://www.aahs.org/medstaff/?page_id=3269](http://www.aahs.org/medstaff/?page_id=3269) (which has the complete AAMC Drug Shortage list) are the AAMC Critical Drug Shortages for December 2013. As everyone knows this is a moving target and changes often. The most critical items are the ones listed below with the complete list including the ones below see link above. Please forward to your colleagues since many may not see or receive this e-mail. If anyone wishes to be added please let me know and I will add to the group.

1. **Neostigmine injection** – Has been on/off backorder for a while reducing stock in pharmacy slowly. Not available as a direct ship item from manufacture. Company estimates release date February 2014. Primarily affect anesthesia and separate communication will be sent out to anesthesia leadership. Consider reducing use if appropriate. May be able to augment use with atropine and/or using edrophonium.

2. **Prochlorperazine injection** – Currently unavailable due to manufactures closing operations. AAMC Pharmacy currently is nearly or already depleted throughout much if not all of the hospital. Conserve when appropriate. Alternatives for nausea/vomiting include but not limited to ondansetron, promethazine, and metoclopramide. All of these medications also come in a variety forms (IV, table, liquid, and some SL). Oral and rectal formulations of prochlorperazine are still available.

3. **Sincalide (Kinevac) injection** – Radiology (AAMC and Bowie) has been notified of the shortage. Currently limited on what is available. For inpatient use Pharmacy is able send out to a compounding pharmacy for dose. For AAMC Outpatient/Off Campus area we have only 20 vials on the shelf. No estimated date of any further release is available. This product used primarily for diagnostic testing of gallbladder.

4. **Medications out of stock include** – ammonium chloride, droperidol vials, epinephrine preservative free ampules, hydroxyzine injection, nitroglycerine IV vial, pancuronium injection, papaverine injection, prochlorperazine vials, sodium phosphate IV, and sodium thiosulfate IV.

5. **New shortage products** – cefazolin 1gm vial, neostigmine injection, and nitroglycerine 0.2mg/mL 250mL bottles

6. **Medications discontinued by manufacture** – caffeine benzoate IV

7. **Resolved** – fat emulsion, indigo carmine, and phytonadione syringes (newborns)

Please forward to staff and colleagues as needed. If you have further questions about this please do not hesitate to ask or e-mail me, Jared Calish, PharmD, Pharmacy Clinical Coordinator [jcalish@aahs.org](mailto:jcalish@aahs.org).
Situation:
To inform all healthcare personnel about imminent or already occurring medication shortages facing AAMC.

Background:
Due to a variety of reasons AAMC is currently faced with the following medication shortages listed below with alternatives or other information provided as needed or known to the Pharmacy Department.

Assessment:
Medication currently designated as **critical shortages** for AAMC are listed below:

1. Ammonium chloride vials – Long term back order since July 2011, **out of stock**.
2. Atropine vials (adult concentrations) – Limit stock available. Adult concentration is on backorder but reserves are full ~500 adult doses on hand.
3. Atropine vial (pediatric concentration) – This concentration (0.4mg/mL) on/off backorder and has been very limitedly available from wholesaler.
4. Caffeine benzoate IV – **Out of stock** at the wholesaler, caffeine citrate is available. No estimate release date is known; only one manufacturer exist – American Regent and may discontinued production; no release date given.
5. Calcium chloride injection – Wholesaler is out of stock of vials but able to supply with pre-filled syringes.
6. Cefazolin 1gm vial – Out of stock at wholesaler and receiving direct orders only from manufacture. Not affecting 10gm vials at this time.
7. Dexamethasone injection – All brands out of stock at wholesaler. Pharmacy receiving direct shipments from manufacturer of 1mL and 5mL vials.
8. Droperidol – American Regent sole manufacture and currently not making for various manufacturing reasons. Out of stock at wholesale level. Pharmacy is **out of stock**.
9. Epinephrine preservative free ampules – Manufacturing delays in producing product causing the delay plus an increase demand. Pharmacy is **out of stock**.
10. Glycopyrrolate – All sizes currently on backorder from supplier. Receiving limited amount of 5mL and 20 mL vials. Release expected end of January.
11. Hydroxyzine IV – The smaller 2mL vial not available from wholesaler and Pharmacy is **out of stock** of this. Pharmacy has a very limited supply of single dose 10mL vial that are being drawn up to use when needed.
12. Methyldopa IV – Sole manufacture, American Regent had recalled the product in 2011. Since then AAMC has received on shipment of 20 vials. This is currently all we have in stock.
13. Multivitamin (Thera-M Plus) tablets – Limited amount left in supply at AAMC. Will need to switch manufacture to provide patients. Not information when new release available.
14. Neostigmine injection – Has been on/off backorder for a while reducing stock in pharmacy slowly. Not available as a direct ship item from manufacture. Company estimates release date February 2014.
15. Nicardipine vials – Several manufacture recalls, one manufacture closed production, and the rest of the manufactures trying to keep up with demand creating shortage. No estimated time of release known.
16. Nitroglycerine IV Vial – Current <10 vials on hand. This does not seem to affect premade nitroglycerine.
17. Nitroglycerine 0.2mg/mL 250mL bottles – Out of stock at wholesaler. Limited amount in reserve.

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18. **Oxytocin vial** – Manufacture not able to keep up with demand. No estimated time of release known.
19. **Pancuronium IV** – Long term backorder with manufacturer, none available at AAMC.
20. **Papaverine injection** – **Long term back order.** Bedford and Sandoz manufacturers have discontinue manufacturing leaving American Regent who has temporarily suspended distribution of drug supplies. American Regent cannot estimate a release date at this time. Pharmacy is out of stock.
21. **Prochlorperazine injection** – One manufacture that supplies this medication is closing in early 2014. This leaves one sole manufacture to supply; therefore demand is exceeding production of this product. No estimated time of release known.
23. **Sincalide injection (Kinevac)** – Currently on manufacture backorder with no estimated release of product known.
24. **Sodium phosphate injection** – Increase demand of product. Pharmacy is now out of this preparation.
25. **Sodium thiosulfate vials** – Not available from wholesaler at this time. Pharmacy out of stock.

**Recommendations:**

1. **Ammonium chloride vials** – AAMC has very little historical use, primarily used for treatment of hypochloremia or hypochloremic metabolic alkalosis for patients who cannot receive sodium chloride and in end-stage renal disease. **Out of stock.**
2. **Atropine vials (adult concentrations)** – Pharmacy has a supply but stock continues to dwindle (~500 vials on hand). Unsure when drug will be released
3. **Atropine vial (pediatric concentration)** – Pharmacy has limited amount of manufactured vials. Clatanoff Pharmacy has been using the Pharm-Medium compounded 1mg/2.5mL syringes to help supplement the pediatric OR areas (Anesthesia).
4. **Caffeine benzoate IV** – Primarily used to treat emergency respiratory failure associated with CNS depressant overdoses. It has off-label uses for treatment in the overdose of CNS depressant agents; although no longer the preferred agent for this indication. Caffeine benzoate was more commonly used for postdural puncture headache and in combination of ECT to prolong seizure duration. The Caffeine citrate formulation is use for neonates for apnea.
5. **Calcium chloride injection** – No vials remain in AAMC, but Pharmacy has increased the compliment of syringes to compensate. IV nutrition patients who need IV calcium are replaced with separate riders of calcium gluconate as needed. Calcium gluconate supply now back in stock at whole sale level.
6. **Cefazolin 1gm vial** – Continue to simplify antibiotic choices when applicable – aggressive antibiotic stewardship. Consider oral therapy if appropriate. Pharmacy may need to make 1 and 2gm doses from larger 10gm vials which may impact timing, please be aware.
7. **Dexamethasone injection** – Limit the use of IV dexamethasone. Consider alternates such as but not limited to oral dexamethasone, methylprednisolone, hydrocortisone, or prednisone.
8. **Droperidol** – There are other antiemetic alternatives to consider if such as: ondansetron, metoclopramide, promethazine, and prochlorperazine (IV now available). Most of these medications are available as an injection, oral, and rectal formulations. Pharmacy is currently out of stock of this medication.
9. **Epinephrine preservative free ampules** – The preservative free vial primarily used in the operating room. Regular non-preservative free vials are appropriate to use based on the package insert. An alternative is the regular epinephrine vials/ampules. These vials contain

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0.1% sodium bisulfate but are compatible for ophthalmic use. No estimate from manufactures on return of product.

10. **Glycopyrrolate** – The 5mL vials are restricted to Anesthesia while the 20mL vials will be divided up into 2mL doses provided by Pharmacy. The 2mL vials that are left are all deployed into Pyxis machines across the institution. Estimated release of 2mL vial size is **early 2014**. Anesthesia is aware of the shortage and will try to augment use with atropine. Uses for outside of the OR, primarily for secretions other options are available (i.e. hyoscyamine [Levsin SL tablets], scopolamine patch, and atropine at low dose 0.4-0.6mg).

11. **Hydroxyzine IV** – Currently none on hand except for what is left in our Pyxis machines. Please consider alternatives such as diphenhydramine or cetirizine for urticaria/atopic dermatitis/pruritus. No estimated time of release known.

12. **Methyldopa IV** – Limited amount exists, consider alternatives: IV hydralazine or IV labetolol.

13. **Multivitamin (Thera-M) tablets** – Pharmacy will be switching from Thera-M Plus to Thera-M. The major difference is new product has no vitamin K, otherwise basically similar makeup.

14. **Neostigmine injection** – Primarily affect anesthesia and separate communication will be sent out to anesthesia leadership. Consider reducing use if appropriate. May be able to augment use with atropine and/or using edrophonium.

15. **Nicardipine vials** – Pharmacy is carry pre-made nicardipine drips (brand Cardene). Major difference is cost, Cardene much more expensive than generic nicardipine.

16. **Nitroglycerine IV Vial** – Considering use premade nitroglycerine drips.

17. **Nitroglycerine 0.2mg/mL 250mL bottles** – Pharmacy has a reserve on hand but slowly dwindling. Consider alternatives such as NTG SL tablets or ointment, isosorbide dinitrate, or nitroprusside drip.

18. **Oxytocin vial** – AAMC has supply on hand but is dwindling. Premade drips do not seem be affected at this time (30 units Oxytocin/500mL). Pharmacy is receiving on limited basis short-dated product.

19. **Pancuronium IV** – **None available at AAMC**. Alternatives include succinylcholine, cisatracurium, and/or vecuronium.

20. **Papaverine injection** – **No presentation available**. Possible alternatives may be nitroglycerine for vasodilatation, but this may not be a good option due to its limited availability – see above.

21. **Prochlorperazine injection** – Several alternatives exist in several formulations (oral, injections, SL, liquid, and rectal). Several alternatives include: ondansetron, promethazine, and metoclopramide.

22. **Potassium Phosphate** – Limited amount available for use for those patient with severe hypophosphatemia. Oral replacement phosphate is available. Pharmacy may obtain if needed sodium glycerophosphate, an organic phosphate at a concentration of 1mMole/mL to swap out if needed – see below.

23. **Sincalide injection (Kinevac)** – Radiology (AAMC and Bowie) has been notified of the shortage. Currently limited on what is available. For inpatient use Pharmacy is able send out to a compounding pharmacy for dose. For AAMC Outpatient/Off Campus area we have only 20 vials on the shelf. No estimated date of any further release is available. This product used primarily for diagnostic testing of gallbladder.

24. **Sodium phosphate injection** – CAPS, our compounder has supply of sodium phosphate at present time. This agent is of particular importance because renal patients cannot tolerate the potassium phosphate as an option. Try oral phosphate if the patient can tolerate. Pharmacy is carrying sodium glycerophosphate, which is an organic phosphate. The only difference between this and the original phosphate is the concentration of phosphate 1mmol/mL vs. 5mmol/mL.

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25. Sodium thiosulfate vials – Currently found as an individual agent and in combination with our Cyanide antidote kits. This product is out of stock. Information was forwarded to AAMC Emergency Preparedness Department and our local strategic stockpile liaison. Alternative is hydroxocobalamin as an antidote.