Methotrexate

**For Emergency Department Use**

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**Methotrexate**

- Current literature promote the use of Methotrexate as the non-surgical treatment of choice for hemodynamically stable patients.
- **Advantages**
  - Decreased cost by avoiding hospitalization and surgery
  - Decreased morbidity by avoiding anesthesia and surgery
  - Decreased social time loss less time lost from daily activities and work
  - Preservation of fertility by maintaining tubal patency

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**Methotrexate**

- **Class**
  - Folic Acid Antagonists
- **Mechanism of Action**
  - A folate antimetabolite that inhibits DNA synthesis
  - Specifically inhibits the enzymes required for ribonucleic acid and deoxyribonucleic acid synthesis. Thus rapidly dividing fetal cells are most sensitive to the effects of the methotrexate therapy. Causing a termination in progression of the mis-placed growing embryo.
- **Common Side Effects**
  - Vaginal Bleeding: few days to a few weeks – may be light like a period
  - Abdominal Pain: 2-7 days after administration – may be cramps and last 12 hours
  - Nausea, vomiting and diarrhea

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**Methotrexate**

- **Dosage**
  - Ordered based on the patient’s body surface area
  - Single dose ordered as 50 mg/m² IM
  - Note—Repeat serum HCG levels at day 4 and 7; if no decrease a repeat dose can be given at day 7.

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**Methotrexate**

See Hazardous Drugs Management Policy - EC 0048

- Preparation should be done in the pharmacy to decrease the risk of exposure via aerosolization and vaporization will be drawn.
  - Considered a Hazardous Drug because it is a cytotoxic drug.
- Safety—In order to prevent any absorption by employee during preparation and administration. The drug should be transported in sealable plastic bag double bag if not hand delivered to prevent spill on contents in a pneumatic tube system. Any droplets found in the bags should be returned to pharmacy and not opened for risk of exposure.
  - Should come in a Luer Lock Syringe with stopper attached.
Methotrexate

Prior to Administration
• Most Hospitals use the 2 provider check because it is considered a high-alert drug.
• Use the 5 rights of medication administration for proper confirmation.

Methotrexate

Ready to Administer
• Plastic backed pad should be placed on the work area.
• Chux pad to prevent contamination of drug on work surfaces
• Apply approved gloves; typically 2 pairs (Green-Nitrile)
• Chemo Gowns
• Remove the syringe cap and apply appropriate needle.
• Note—Important not to expel air or prime the needle in order to prevent aerosolization of drug contents.
• Single deep IM injection typically given in the buttock.

Methotrexate

Product Disposal
• All items used during the Administration are considered to be CONTAMINATED.
• EPA and OSHA require special disposal of all Hazardous drug products in specially marked containers
• Containers should be puncture proof and labeled with warnings AND have a sealed lid.
• These specially marked containers have YELLOW trash bags are kept in the dirty utility room.
• Sharps are to be placed in the marked YELLOW sharps containers in the medication rooms.

Methotrexate

Spills
• Spill Kit can be used depending on the size
• Minor less than 50 ml—Trained department members for spill kit
• Call 333 to report any major spills

Methotrexate

Patient Education
• Body Fluid Contamination
  • Urine can contain metabolites up to 72hrs
  • First 8hrs is when concentration is the highest and can be considered toxic.
  • DOUBLE flush with the lid CLOSED
• Since we do not have toilet seats in the ED, encourage your patient to void before drug administration, a commem may have to urinate in the sink and the sink lid must be used in order to safely remove contents after patient completion.
• Stools can contain residuals up to seven days
• Resume normal activities
• No Products in the vagina
• No Alcohol or Sulfas based drugs

References
• Lexicomp Drug Database
EC:0048 Hazardous Drugs Management - Information sheet

- HD vs. HW: Hazardous drugs pose potential health risks via occupational exposure. Hazardous wastes are potentially harmful to the environment.

- Identification of HDs: Hazardous drugs will be identified with a sticker from the pharmacy as well as on the eMAR.

- Personal Protective Equipment: Double nitrile gloves are worn during tasks where there is anticipation of hand exposure and should be changed out after 30 minutes of use. For tablets, pills and capsules, no specific precautions are required if the drug is maintained in original manufactured form (i.e., not crushed, cut or split). Chemotherapy gowns are worn during tasks where there is anticipation of body splash or splatter. Gowns must be worn when handling IV chemotherapy.

- HD Precautions:
  - Upon start/until 48 hours after stop
  - Door signs - Patients receiving HD are identified using sign to alert other staff
  - For staff – protect from occupational exposure from all HDs
  - For patients – for chemo/biotherapy, teach chemo precautions; for others, teach according to drug
  - Reminder: Check ‘Patient Education’ section of drug reference for more info

- Waste disposal
  - Refer to waste disposal table, in the Hazardous Drugs Management policy, for proper disposal of hazardous drugs and associated waste materials.
  - Contaminated linen and personal or hospital clothing – all linen will be treated as contaminated. NO labeling will be required.
  - NOTE: Procedure for cleaning of contaminated personal clothing outlined in Linen Department policy 102-A Management of Contaminated Personal Clothing

- Spill Response
  - Minor spills (<50 ml/cc) - can be remediated by trained departmental staff in control of the HD by using a spill kit. Spill kits are available through the Lawson system (#60434). Following any spill, complete the Hazardous Drug Spill Checklist (attached to policy).
  - Major spill (>50 ml/cc) – to report, call 911 and provide spill location, chemical, quantity and if anyone is injured

- Safety Data Sheets (SDS) - Pertinent safety and health information on HD can be obtained through the Hospital’s intranet under: Resources>Drug References>MicroMedex (enter drug name)>Toxicology and Exposure Information> MSDS

- Nitrile glove Lawson numbers – 13303, 13304, 13305 (S,M,L)
- Chemotherapy gown Lawson number – 60804
- Go-live date for revised policy: Monday, November 19, 2012 (implementation may begin immediately)

11.2012 C. Beck
## Waste Disposal

Refer to the table below for proper waste disposal:

<table>
<thead>
<tr>
<th>Waste</th>
<th>Examples</th>
<th>Waste Container</th>
<th>Waste Pick-up by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Drug Preparation Areas (Pharmacy):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy Hazardous Drugs</td>
<td>• Chemotherapy Preparation Waste</td>
<td>• Black Container</td>
<td>• EH&amp;S</td>
</tr>
<tr>
<td></td>
<td>• Unused or Expired Hazardous Drugs</td>
<td>• EcoStation</td>
<td>• EH&amp;S</td>
</tr>
<tr>
<td>Hazardous Drug Administration Areas:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unused or Expired Hazardous Drugs</td>
<td>• Smaller containers</td>
<td>• Return to Pharmacy container in Med Room</td>
<td>• Pharmacy</td>
</tr>
<tr>
<td></td>
<td>• Larger containers</td>
<td>• Hand Deliver to Pharmacy</td>
<td>• Nursing Staff</td>
</tr>
<tr>
<td>Partially Used Hazardous Drugs</td>
<td>• Partially Used Hazardous Drugs with a HW Label except Arsenic Trioxide</td>
<td>• Black waste container in Med Room</td>
<td>• EH&amp;S</td>
</tr>
<tr>
<td></td>
<td>• Partially Used Hazardous Drugs with no HW Label</td>
<td>• Arsenic trioxide return to Pharmacy</td>
<td>• Pharmacy</td>
</tr>
<tr>
<td>Trace (Visually Empty) Hazardous Drugs</td>
<td>• Trace (visually empty) Hazardous Drug, excluding arsenic trioxide</td>
<td>• Container lined with yellow bag</td>
<td>• Hospital Custodial Services</td>
</tr>
<tr>
<td></td>
<td>• Trace (visually empty) Arsenic Trioxide</td>
<td>• Return to Pharmacy</td>
<td>• Pharmacy</td>
</tr>
<tr>
<td>Sharps (Visually Empty)</td>
<td>• Sharps with Trace (visually empty) Chemotherapy</td>
<td>• Yellow Sharps Container</td>
<td>• Hospital Custodial Services</td>
</tr>
<tr>
<td></td>
<td>• Sharps with Trace (visually empty) non-chemo Hazardous Drugs</td>
<td>• Sharps Container</td>
<td></td>
</tr>
<tr>
<td>Gross Contaminated Material</td>
<td>Spill Clean Up Materials</td>
<td>Yellow Bag from Spill Kit</td>
<td>EH&amp;S</td>
</tr>
<tr>
<td>Trace Contaminated Material</td>
<td>Gloves, Visibly Contaminated Gowns, Pads, Diapers</td>
<td>Yellow Bag</td>
<td>Hospital Custodial Services</td>
</tr>
<tr>
<td>Urine</td>
<td>• Urinals, bedpans, foleys</td>
<td>• Disposed in hopper/toilet</td>
<td>• Not Applicable</td>
</tr>
<tr>
<td></td>
<td>• Foleys (visually empty)</td>
<td>• Yellow Bag</td>
<td>• Hospital Custodial Services</td>
</tr>
</tbody>
</table>