3.5.1 Health Care: Medical Clinics/Offices

Tip Sheet #1

WASTE ORIGIN: **Diagnostic Materials and Cleaning Equipment**

WASTE TYPES: Alcohols, Developer and Developer Systems Cleaners (Chromium),Pharmacy Supplies, Photographic Wastes, Silver (X-ray Fixer, X-ray Film), Solvent Wastes (Xylene, Xylene-alcohol Mixtures), and Vapor Sterilizer Chemicals (Formaldehyde)

WASTE REDUCTION AND RECYCLING METHODS:

- **Control inventory** to reduce both solid and hazardous wastes:
  - ***Minimize*** chemical inventories with "Just-in-Time" purchasing;
  - Arrange with a supplier to make ***daily deliveries*** (eliminates maintaining expensive inventory and minimizes storeroom space);
  - Provide area where chemical and liquid wastes ***cannot drain to the sewer*** in the event of an accident or spill;
  - Use the first-in, first-out system to ***rotate chemical stocks***, pay attention to expiration dates;
  - Buy drugs in container sizes that permit formulation of daily doses with the ***least quantity of excess product*** leftover;
  - ***Centralize*** chemical and/or drug procurement through one department or person.
- Request **recyclable tote containers** from suppliers, whenever possible, to reduce chemical drum waste and disposal costs.
- **Separate waste streams** to avoid mixtures of hazardous and nonhazardous liquids (reduce volumes of waste requiring special treatment):
  - ***Avoid mixing solvent wastes***, like xylene, with alcohols (methyl, ethyl, and isopropyl), chromic acid (glassware cleaner), and water.
- **Determine dilution rates of alcohol** that can be discharged to the sanitary sewer system; consult the local publicly-owned treatment works (POTW) on what disposal activities are acceptable.
- **Reduce photographic wastes** from imaging equipment, like wastewater containing photographic chemicals and silver from film:
  - Extend the ***life of fixing baths*** by adding ammonium thiosulfate (doubles the allowable concentration of silver buildup in the bath);
  - Add acetic acid to fixing baths to keep the ***pH of the bath*** optimally low.
- **Do not mix used X-ray fixer and developer**: dedicate separate containers and treatment methods.
- **Used X-ray fixer** can be handled in a couple ways:
  - Collect and store in a closed plastic ***container*** labeled "Hazardous Waste - Used Fixer" with the date fixer was first added;
    - Contact a ***recycling service*** when enough fixer has accumulated (usually 5-10 gallons);
  - Install a ***silver recovery unit*** at the end of the X-ray processing unit.

- **Used X-ray film** should be placed in a labeled container; silver reclamation companies often take film.
- **X-ray developer** can be poured down a drain (sewered) that is connected to a POTW, but not into a septic system.
- Contact local or state government agencies with solid and hazardous waste departments for **information on recycling services** and medical/infectious waste transporters/disposers.

Sources:

Fact Sheet: *Managing Waste Generated by Dental Clinics*, Minnesota Technical Assistance Program, Minneapolis, MN, Publ. 2/95-81, 1995.
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Hospital Waste Reduction Checklist, Solid and Hazardous Waste Education Center, University of Wisconsin-Extension, 1996.
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