

Dental Medical Waste: The Neglected waste Disease  
Best practices approach to medical waste management in dental and medical offices.

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## Situation

- Main source of mercury wastewater discharges
- 50 % Hg entering POTWs was contributed by dental offices
- 4.4 tons of mercury each year to POTWs
- About 160,000 dentists working in over 120,000 dental offices use or remove amalgam in the United States; almost all of these send their wastewater to POTWs

## Type of wastes generated

- Some of the waste amalgam particles that reach the sewer system settle out in the sewers, and some are carried to POTWs.
- POTWs remove about 90 percent Hg
- The mercury removed from wastewater then resides in the biosolids or sewage sludge generated during primary and secondary treatment processes.
- Mercury and amalgam waste,
- Used X-ray fixers and developers;
- Cleaners for X-ray developer systems;
- lead foils, shields and aprons;
- chemiclave/chemical sterilant solutions;
- Fluoride
- disinfectants,
- cleaners,
- Other chemicals; and,
- general office waste.

## Forms of Waste

- Wastewater
- Medical Waste
- Regular Garbage

Best practices approach to medical waste management in dental and medical offices.

- Pollution Prevention
- Best Management Practices

### Pollution Prevention

- education and training,
- good housekeeping practices,
- chemical inventory control, and
- recycling
- Elements of a successful pollution prevention program are:
  - a written statement of policies and goals tailored to each dental practice;
  - a commitment to consistent administration of the program; and,
  - continuous monitoring of pollution prevention policies and goals
- Pollution Prevention Practices
  - Use amalgam substitutes (Composite resin fillings )
  - Use non-hazardous or biodegradeable detergents for clean-up.
  - Use non-chromium containing X-ray developer system cleaners.
  - Educate your staff and cleaning service on these practices

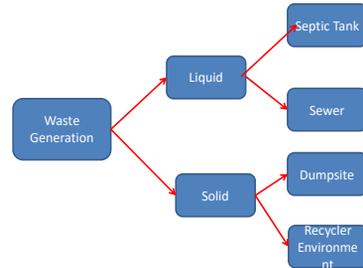
### Best Management Practices

- Best management practices are economically achievable measures or actions that can be used to control or reduce the entry of pollutants into the environment
- **Steps You Can Take**
  - Amalgam Capsules
  - Scrap Amalgam
  - Chairside Traps
  - Vacuum Pump Filters
  - Amalgam Separators
  - Plumbing Replacement and Repairs

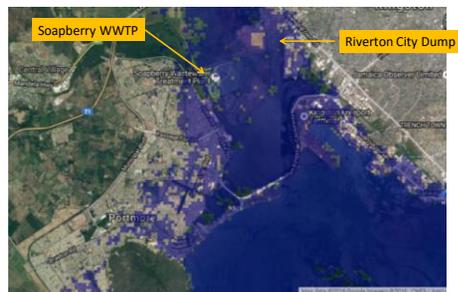
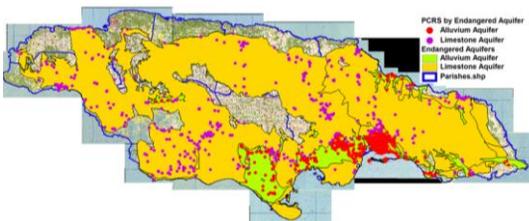
### Best Management Practices

- Used X-Ray Fixer Solution (Containing Silver)
- X-Ray Developer (Silver) (Sewer)
- Cleaners for X-Ray Developer Systems (Chromium)
- Lead Foils, Shields & Aprons (Recycle)
  - 7 – 10 pounds per year
- Chemiclave/Chemical Sterilant Solutions (Dilute)

### The Complete Management Practice Cycle



### Endangered Aquifers



## Fluoride Health Impacts

Increases lead absorption	Dementia	Genetic damage and cell death
Disrupts synthesis of collagen	Bone fractures	Increases tumor and cancer rate
Hyperactivity and/or lethargy	Lowers thyroid function	Disrupts immune system
Muscle disorders	Bone cancer (osteosarcoma)	Damages sperm and increases infertility
Brain damage and lowered IQ	Inactivates 62 enzymes	Impairs sleep by impairing melatonin production by your pineal gland
Arthritis	Inhibits formation of antibodies	

Thanks