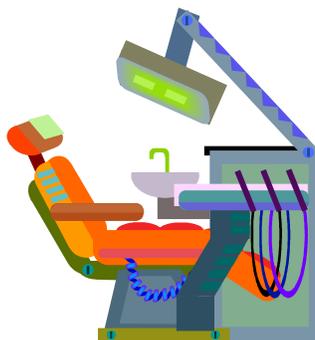


Dentistry



Regulation and Inspection

Dentists are visited regularly by environmental compliance inspectors. Dentists are responsible for taking several precautions to ensure that patients, staff, and the environment are protected. Dental practices must be equipped to protect patients and staff from exposure to different health risks. Precautions must also be taken to prevent any harmful chemicals or materials from polluting the environment.

Complying with environmental laws and reducing health and environmental risks at the source through pollution prevention, can help ensure patient and worker safety, reduce costs associated with the generation of waste, prevent the risk of future liability, and protect our air, water and land.

Typical Wastes

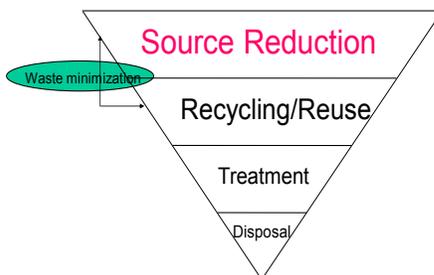
Wastes at Dental practices are generated by the following activities:

- **Photo (X-ray) processing fixer (silver)**
- **Amalgam placement and removal (mercury)**
- **X-ray Lead aprons/foils (lead)**
- **Chemical Sterilization (toxic chemicals)**
- **Patient care (syringes, biomedical, pharmaceutical)**
- **Office Activities (energy, water, electronics, lamps, batteries, paper, cardboard, beverage bottles and cans)**

Note: Fluorescent lamps, rechargeable batteries and electronics (computer monitors) can be recycled as Universal Waste, a regulatory term requiring less stringent management as long as they are recycled. These items may contain mercury and other toxic metals. Keep wastes separated for proper recycling.

Waste Management Hierarchy

(US EPA Policy, 1976)



Pollution prevention (P2) is reducing waste at the source = Source Reduction.

P2 is using less toxic materials and using resources efficiently (including water and energy) to reduce the generation of waste.

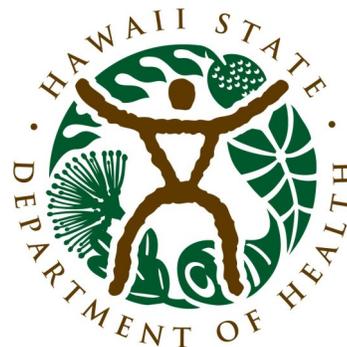
P2 can save businesses money while protecting our environment.

INSIDE

- **Regulation and Inspection**
- **Typical Wastes**
- **P2 Action**

Energy and water are precious resources for our community. Do your part to save by having an audit done; check for water leaks and fix immediately; install the latest technologies; and replace incandescent lights with low mercury fluorescent or LED lighting. Visit:

HECO www.heco.com
BWS www.hbws.org (Oahu)



NEIL ABERCROMBIE
Governor

LORETTA J. FUDDY
Director of Health

Pollution Prevention (P2) Action

Photo/X-Ray Processing

Use digital X-rays: Photo x-ray processing uses various chemicals and generates waste fixer containing silver that must be managed as hazardous waste or the silver reclaimed and recycled properly. The photo x-ray process also uses a lot of water. Use of digital x-ray equipment eliminates the need for photo processing chemicals and the resulting waste. In addition, digital x-rays can reduce patient radiation exposure.

Properly manage X-ray fixer waste: Fixer waste is considered a hazardous waste because of its high silver content. Fixer is easily recycled. Use a silver recovery unit for you developing system or have a recycler come and pick it up.

Amalgam/Mercury Waste

Use resin composite fillings: Amalgams are typically 50% mercury with silver, tin and other metals. The detrimental health effects of mercury are widely known therefore it is important to prevent releases of mercury to the environment. Mercury is also highly regulated, requiring careful management. Amalgam should never be placed in an autoclave or sent for incineration (H-Power). This can release mercury to the air in a very toxic form. It must never be poured in the regular trash, infectious waste (red bag), or down the drain.

Change or clean chair-side amalgam traps frequently: Waste amalgam generated by filling removal can be captured through chair side traps and amalgam separators. If cleaning the traps, flush the vacuum system before changing the chair-side trap. Don't rinse the amalgam traps over drains or sinks. Consider dedicating specific chairs to amalgam placement and removal to minimize the number of amalgam-containing traps that need to be managed. Collect this waste mercury and place it in a labeled closed container. Recycle mercury, at least annually, through mail-back or collection services.

If amalgam fillings cannot be avoided, use pre-encapsulated alloys, obtain a mercury spill kit, train staff and recycle the waste mercury and capsules.

Lead Foils, Shields, and Bite Wings

Recycle spent lead foils, aprons and bite wings: through scrap metal recyclers or supplier take back programs. Lead-free x-ray aprons are now available.

Mercury is considered a PBT: Persistent Bioaccumulative Toxic material. Mercury never goes away. When mercury breaks down it actually becomes more toxic as methylmercury.

Sterilization

Move away from chemiclave sterilization to autoclaves:

The best way to avoid using or generating waste chemical sterilants is to use an autoclave that uses steam to sterilize instruments. Many chemical sterilants and pharmaceuticals are hazardous due to flammability, toxicity, corrosivity or being a "listed" waste. When spent, these chemicals must be managed as hazardous waste. Always review the product's Material Safety Data Sheets (MSDS) for hazard information. Never dispose of spent hazardous chemicals down the sink. Tightly manage pharmaceutical inventories to avoid expired products and waste.

Use up or dispose of discarded materials properly: If using chemiclave sterilization, dental offices should buy only the amount of chemical sterilizer that is required. This will eliminate the need to dispose of the excess material. If you switch to an autoclave and has a supply of unused formaldehyde, you should give this to a dentist who still uses a chemiclave.

Other

Choose Bleach-Free line cleansers: Chlorine containing disinfectants have been shown to dissolve mercury, releasing it further into the wastewater system where it can flow directly through to our ocean.

Choose dry vacuum systems: Dry vacuum systems for oral evacuation, can save a minimum of 20 g/hr of water and can reduce electrical consumption by up to 60%.

Photo-Silver recovery services:

Hawaii Biowaste Systems 841-1240
 NCNS Environmental, Inc. 847-7875
 SERVALL : 754-4793
 Silver Recovery Systems of Hawai'i
 (888) 814-8819

Amalgam/mercury/Fluorescent lamps recycling services:

All vendors should be asked to provide certification that your mercury is actually being recycled.

EnviroServices: 839-7222
 Pacific Environmental Corp (Penco)
 545-5195
 Association of Lighting and Mercury Recyclers—National
www.almr.org/Membership_Roster.pdf

Disclaimer: The listings of products or companies on this brochure are not complete and do not constitute an endorsement by the State of Hawai'i.

Some Bleach-Free Line Cleansers:

E-Vac, ProE-Vac, Stay-Clean, EZ-Zyme, PureVac, Turbo Vac Line Flush, Green and Clean, Sanit-Treet Plus, VAC-U-EZ



"P2 is a choice; being "green" is making that choice."