Managing Dental Office Waste

Most waste generated in dentistry is no different from household waste. However, due to the nature of dental treatment, virtually all offices will encounter regulated waste at some point in time. It is important to understand the differences between regulated and non-regulated waste and the various rules regarding how to handle the regulated wastes. Dental offices generate regulated waste when they discard used needles and other sharps, when they dispose of used and expired chemicals and other hazardous materials, and in some states, when they throw out expired medications. Regulations vary from state to state, and even within a state's cities and counties. Although there are not standardized regulations, there are practices that every office can implement to decrease the contamination of the environment, and reduce the risk of handling potentially dangerous waste.

Hazardous waste
When it comes to hazardous waste, the preferred method of management is "source reduction". This means that the individual or company generating the hazardous waste implements measures to reduce the amount of waste they produce. There are several ways to do this, including:
- Purchasing only the amount you know you will use
- Purchasing items in smaller quantities more often to avoid expiration

- Rotating stock to prevent expiration
- Substitution with less hazardous products

Another waste reduction strategy is recycling. Some products that are a hazardous waste can be recycled instead of discarded. Some of the common items that are recyclable include metals such as amalgam, lead foil, silver from x-ray processes, batteries, alcohol-containing fluids including spent solutions from chemical vapor sterilizers, and fluorescent lights. If these items are not recycled then they become a hazardous waste. Because of the increased cost to recyclers to process these materials, there is likely a fee for recycling just as there is for disposal, but it is often less expensive and it is preferable to incineration or landfill disposal.

In addition to reducing the amount of hazardous materials an office stores and uses, it is also important to plan for accidents. Even small spills of a chemical can present a challenge when it comes to clean up. Different chemicals require specialized clean up materials, which are also a hazardous waste after use. Commercially available absorbent sponges with a special neutralizer are best for small mercury spills, neutralizing pellets that gel on contact are best for formalin and any type of absorbent materials for x-ray processing chemicals work well. Prevent spills by storing waste such as spent x-ray processing chemicals using secondary con-

Learning Objectives
After reading this article, the reader should be able to:
- identify the various types of regulated waste generated in a dental office.
- understand the appropriate practices for management of hazardous waste.
- identify the difference between contaminated and regulated medical wastes.
Managing Dental Office Waste
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tainers. This means that the waste con-
tainer is in a bucket (or other suitable
vessel) to contain liquid that accidental-
ly spills or leaks during storage. In
some locations, secondary storage is a
requirement.

Always use a licensed treatment, stor-
age, and disposal company (TSD) to re-
move and treat or dispose of all haz-
ardous waste. Ask to see the company’s
permit for transport and disposal of haz-
ardous waste and their proof of insur-
ance coverage. The hazardous waste
generator (in this case the dentist or den-
tal practice) is ultimately responsible for
what happens to the waste, even after it
leaves the dental office. The regulatory
ages refer to this as “cradle-to-grave”
responsibility. Therefore, it is essential
to use a reputable company that will
dispose of the waste in a proper manner.

Regulated medical waste
There are two types of medical waste;
contaminated and regulated. Contami-
nated waste may contain blood or saliva
but it does not release body fluids dur-
ing handling. In most locations, it is
only necessary to prevent the barehand-
touching of this waste. It is prudent
(but not usually required) to place chair-
side wastes such as gauze and gloves
into a small bag that is discarded into
the regular trash at the end of the ap-
pointment. Line trash bins with plastic
disposable bags and discard the contents
with the bag rather than emptying the
trash bin and reusing the trashcan liner.

Regulated medical waste includes liq-
quid blood and other potentially infec-
tious materials (OPIM) or items that
contain blood or saliva to the point that
it would release those fluids during han-
dling. Many states regulate extracted
teeth as medical waste; check with your
local regulator for rules on extracted
teeth. Collect this “soft waste” in a red
biohazard bag and discard into a con-
tainer that is leak proof, closeable and
clearly labeled as biohazardous waste.
In many locations, there are storage lim-
its for medical waste. Often the storage
limit depends upon the amount of waste
generated by a single office. Larger gen-
erators of medical waste, such as hospi-
tals generally have stricter requirements.
Small generators of medical waste, such
as dental offices, usually can store regu-
lated medical waste up to ninety days
after they begin filling a container.

Used disposable sharp items includ-
ing needles, blades, ends of orthodontic
wires and glass are regulated medical
waste and should be disposed into
sharps containers. Sharps containers
must be rigid on the sides and bottom,
closeable, maintained in an upright posi-
tion and labeled with the biohazard
symbol. Place sharps containers in each
treatment room to allow discarding of
sharps at the point of use.

— OSAP
**Compliance Corner**

**USPS**

A convenient and economical option for disposal of contaminated sharps is the use of mail-in services. The United States Postal Service (USPS) has specific requirements for the mailing of sharps to the treatment facility.

- Only sharps waste and regulated medical waste mailing container systems approved by USPS Headquarters may be mailed. Approved packaging must meet all requirements ... including a leakproof primary receptacle, a leakproof secondary containment system, sufficient absorbent material, and a strong outer packaging.
- Approved outer shipping containers must clearly display the company name of the USPS authorized manufacturer, the approval number, and the container ID number.
- Each mailpiece must be clearly marked on the address side with “Regulated Medical Waste-Sharps, UN3291” or “Regulated Medical Waste, UN3291.”
- Each mailpiece must bear a properly prepared merchandise return service label held in the name of the authorized medical waste manufacturer.
- The universal biohazard symbol must appear on the outside of the mailpiece.
- Orientation markings that properly indicate the upright position of the primary receptacle must be displayed on two opposite outer side walls of the mailpiece.
- A complete return address and delivery address must be used.
- Include the proper documentation. http://pe.usps.com/text/pub52/pub52c_020.html

**Additional waste regulations and guidance websites**

- EPA medical waste information and link to state programs - http://www.epa.gov/epaoswer/other/medical/
- NIOSH guidance on selection of sharps containers - http://www.cdc.gov/niosh/sharps1.html

**Glossary**

**Recycling:** the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products that meet the quality standards necessary to be used in the marketplace.

**Regulated medical waste:** liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; and contaminated sharps.

**Source reduction:** any action that causes a net reduction in the generation of solid waste.

**Universal waste:** low risk hazardous waste generated by a variety of people. This waste includes batteries, pesticides, mercury containing equipment and lamps (e.g., fluorescent, neon, and halide).
Developing your hazardous waste program

Although dental offices typically store minimal amounts of hazardous waste, there are steps that will make the collection and storage of these materials as safe as possible for personnel and the environment. The steps outlined below provide a general guide and starting point for a comprehensive dental office hazardous waste program.

**Identify hazardous waste products the office produces**

Common regulated wastes generated by dental offices include:
- Medical waste, including used sharps
- X-ray processing chemicals
- Lead foil backing from x-rays
- Amalgam (including scrap collected in the traps)
- Germicides (depending on local regulations)
- Universal wastes (batteries, fluorescent lamps, mercury thermometers, etc.)
- Acid etch
- Alcohol

**Create a spill kit for hazardous materials**

- Purchase a commercially available mercury spill kit. These include special absorbent sponges and containers that neutralize mercury vapors.
- Purchase absorbent materials such as chemical spill pads for cleanup of x-ray processing chemicals.
- Purchase a small bag of plain kitty litter, which is an excellent absorbent for general cleanup of chemical spills.
- Store appropriate PPE including heavy-duty nitrile gloves and eye protection with the spill clean up materials.

**Develop standard operating procedures for collection and disposal of medical and chemical wastes**

- Designate a collection area for hazardous chemical and medical waste containers
- Clearly mark all containers with:
  - The universal biohazard symbol and words "Biohazardous Waste" for regulated medical waste.
  - A hazardous waste label that identifies the chemical and collection start date for hazardous chemical waste.
- Check with your county or state health department to determine storage limits and location-specific requirements for labeling and storage of regulated wastes.

**Determine which of the hazardous wastes are recyclable**

- Separate recyclable wastes and do not mark as hazardous waste.
- Contact local waste disposal company and request information regarding local recycling programs.
- If there are no recycling programs locally, contact hazardous waste company to arrange for recycling services.

**Select a vendor for disposal or treatment of hazardous waste**

- Check with your state dental society for vendors specializing in dental offices.
- Ask to see permits and proof of insurance coverage.
- Collect all manifests from hazardous waste transported away from the office and maintain for at least three years.

**Create a training program and conduct training for all employees**

- Review accidental spill procedures
- Include collection, labeling, and storage requirements

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**Ask OSAP**

**Q:** What are we supposed to do with our expired medications, such as those in the medical emergency kit and expired local anesthetic? We have been flushing old medications down the toilet; is it still acceptable to do that?

**A:** It is important to remove expired medications immediately to avoid their accidental use. Whenever possible, control the amount of expired medications by only ordering what you will need and rotating your stock to use the oldest medication first. With that said, sometimes it is necessary to keep medications on hand that are rarely, if ever used and require routine replacement. It is not acceptable to flush medications down the toilet. Dispose of medications separate from other types of waste. The exact method of disposal will vary depending on requirements and resources in your location. Some states consider expired medications a medical waste and have programs for the collection and disposal of the medications. Some manufacturers of pharmaceuticals offer programs in which they will accept back expired medications for proper disposal at their facility. If your state does not regulate pharmaceutical waste and your vendor does not offer a program to take back expired medications, contact your waste disposal company for guidelines on the safe disposal of these materials for your area.

Do you have an inquiry about infection control, occupational health, or practice safety? Ask OSAP. Send your questions to office@OSAP.org.
### Checklist for proper storage of hazardous waste

This checklist, adapted from the National Institutes of Occupational Safety and Health, provides a guide to complying with Environmental Protection Agency regulations for hazardous waste. For each “No” answer, review your hazardous waste procedures and make appropriate changes.

#### Hazardous waste storage

<table>
<thead>
<tr>
<th>Question</th>
<th>Circle One</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the container storing hazardous waste in good condition?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Is the container storing hazardous waste securely closed when not in use?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Is the container storing hazardous waste marked with the words “Hazardous Waste”?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Do you have an arrangement with a registered Hazardous Waste Hauler for removal of the waste?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Do you have a copy of the hazardous waste manifest on site for each waste removed from the location?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Do you maintain hazardous waste manifests for three years?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Are containers of hazardous waste marked with the accumulation start date?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Do you have hazardous waste removed within 180 days of the accumulation start date?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Are container labels visible?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Are containers segregated according to waste type (e.g., do not store acids and bases together)?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Do you conduct weekly inspections of hazardous waste containers for leaks?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Do you have a fire extinguisher if you are storing flammable waste?</td>
<td>Y   N</td>
</tr>
<tr>
<td>Do you have spill cleanup material available in the hazardous waste storage area?</td>
<td>Y   N</td>
</tr>
</tbody>
</table>

#### Training

<table>
<thead>
<tr>
<th>Question</th>
<th>Circle One</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you provide training to all employees that have contact with hazardous waste?</td>
<td>Y   N</td>
</tr>
</tbody>
</table>

#### Does training include the following elements?

<table>
<thead>
<tr>
<th>Element</th>
<th>Circle One</th>
</tr>
</thead>
<tbody>
<tr>
<td>The proper collection and storage procedures for hazardous waste.</td>
<td>Y   N</td>
</tr>
<tr>
<td>The storage time limits for hazardous waste.</td>
<td>Y   N</td>
</tr>
<tr>
<td>The methods to identify a spill or release of hazardous waste.</td>
<td>Y   N</td>
</tr>
<tr>
<td>Procedures for hazardous waste spill, including appropriate cleanup materials and personal protective equipment.</td>
<td>Y   N</td>
</tr>
</tbody>
</table>

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**Ask OSAP**

**Q:** I’m new to dentistry and was assigned responsibility to manage the regulated waste. How to I find the local regulations that we must comply with?

**A:** Each locale has different requirements for regulated waste and the best place to start is with the telephone book under Local Government (generally these pages are blue). Check with the public works department for waste management services. If your area does not have local government, try the county government. You also can check with your local dental society to obtain guidance on the best place to obtain this information.

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To help practices stay on track, OSAP provides this calendar listing typical schedules for periodic maintenance, record-keeping, and infection control activities. This schedule is intended only to serve as a guide. Proper practices, procedures, and maintenance schedules can vary according to the kinds of products used, the practice type, and patient volume. Always follow the device or equipment manufacturer’s instructions for maintenance and infection control.

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If you wish to obtain one (1) hour of continuing education (CE) credit, complete the following test by selecting the best answer and fax or mail it to the OSAP Central Office for grading. Please include a check or credit card to cover handling charges. Pending satisfactory results (at least seven out of ten), you will be issued a letter for one (1) CE credit hour. OSAP is recognized by the American Dental Association as a CERP Provider. For more information, call OSAP at 800-298-6727 (410-571-0003).

For each question, pick the best answer.

1. The preferred method of managing dental office hazardous waste is:
   a. incineration  
   b. landfill  
   c. source reduction  
   d. neutralization

2. Materials used to clean up a hazardous waste spill are then handled as:
   a. hazardous waste  
   b. universal waste  
   c. household waste  
   d. biohazard waste

3. When storing hazardous waste, a secondary container prevents:
   a. spills and leaks  
   b. overfilling  
   c. toxic exposure  
   d. improper disposal

4. The cradle-to-grave responsibility for the proper disposal of hazardous waste belongs to the:
   a. TSD  
   b. chemical manufacturer  
   c. treatment facility  
   d. hazardous waste generator

5. To collect contaminated disposable sharps in the dental office, place the sharps containers in:
   a. the hazardous waste storage area  
   b. each treatment room  
   c. only in the sterilization area  
   d. only in the laboratory

6. Expired medications should be discarded:
   a. down the toilet  
   b. with the regular solid waste  
   c. by incineration  
   d. separate from all other waste

7. Which cleanup material is appropriate for mercury spills?
   a. kitty litter  
   b. chemical spill pad  
   c. special mercury spill kit  
   d. soap and water

8. Containers of hazardous waste should be labeled with:
   a. weight or volume  
   b. accumulation start date  
   c. fill date  
   d. removal date

9. Maintain hazardous waste manifests for:
   a. three years  
   b. five years  
   c. ten years  
   d. fifteen years

10. In general, medical waste must be removed within _____ days of the accumulation start date.
    a. 30  
    b. 60  
    c. 90  
    d. 180

Mail or Fax completed test with the appropriate payment to receive one (1) hour of continuing education credit.

Your Name: _______________________________ OSAP Member Name: _______________________________
(if different)

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☐ VISA ☐ MASTERCARD ☐ CHECK ENCLOSED Fee: ☐ OSAP MEMBER, $10 ☐ NONMEMBER, $15

Name on Card: _______________________________ Card Number: _______________________________

Expiration Date: _______________________________ Signature: _______________________________

MAIL TO: OSAP CE • P.O. Box 6297 • Annapolis, MD 21401 • USA FAX TO: 410.571.0028
Even dental practices that conduct new employee training and have regular staff safety meetings may experience lapses in compliance among the dental team members. Most of the time these lapses are not intentional violations of safety rules, but are long-held beliefs or habits that are difficult to change. In fact, many times as healthcare providers we find it difficult to see ourselves as someone else might, making it difficult to identify unsafe behaviors.

One way to help people remember safe practices is to see a photograph that captures the action. Keep an inexpensive camera in the office and periodically take turns snapping pictures of one another while working. Be sure to include all team members (yes, the dentist, too) so that no one feels singled out. It is also useful to take pictures of various areas throughout the office. It is amazing what you overlook when you see the same thing every day. Some examples of things to look for include:

- Dental team members without proper protective attire, such as eye protection;
- Overflowing trash bins;
- Protective attire worn improperly, such as inside-out facemasks;
- Dust and splatter on the overhead light cover;
- Ergonomic issues, such as leaning and reaching;
- Overloaded electrical outlets;
- Overfilled sharps containers; and
- Stained or damaged equipment in the dental operatory.

The list can go on and on once you start to think about it. Later, at a staff meeting have the team review the images and try to identify what is "wrong" and make suggestions for improvement. The images make a lasting impression and the exercise itself involves the team in a way that is interactive, providing a true learning experience.

Do you have a practice tip you’d like to share with other OSAP members and subscribers? Send your suggestions for enhancing dental infection control and safety in practice to editor@OSAP.org. Be sure to include contact information, a photo, and a brief bio. Thanks!