



Connecticut Department of Energy and Environmental Protection



Environmental Topics for Nursing and Long Term Care Facilities

Date: April 24, 2019
Presented by: Connie Mendolia, Pollution Prevention Division, CT DEEP
Event / Location: Leading Age CT Facility Engineers



Connecticut Department of Energy and Environmental Protection

CT DEEP's Info for Nursing Facilities

1. EPA's final rule on hazardous waste pharmaceutical disposal and how it impacts facilities in CT
2. DEEP's Water Conservation & Buying Less Toxic Products Checklists
 1. Energy efficiency, Portfolio Manager benchmarking



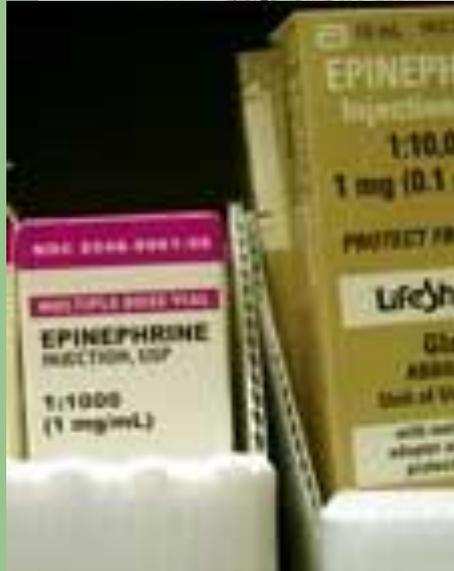
Quick Review of Pharmaceutical Disposal

Waste pharmaceuticals from nursing /long term care facilities in CT are regulated by CT Dept. of Consumer Protection and DEEP:

- RCRA Hazardous waste (P & U listed, Characteristic)
- Controlled substances (unrecoverable, unrecognizable)
- CT regulated waste/special waste
- Biomedical waste (red bag)



Examples of P-Listed Pharmaceuticals (EPA "lists")



Examples of P-Listed Pharmaceutical Wastes - **Acutely toxic**



- *Arsenic trioxide** P012
- **Epinephrine**¹ P042
- Nicotine P075
- **Nitroglycerin**² P081
- Phentermine (CIV) P046
- Physostigmine P204
- Physostigmine Salicylate P188
- Warfarin >0.3% P001

**Chemotherapy agent*

¹ CT regulates medical formulations of unused epinephrine & its salts. Considering adding to universal waste rule in future.

² CT regulates waste nitroglycerin. With adoption of changes to mixture and derived-from rules, medical formulations may not be hazardous wastes in future. Planned adoption late 2019.

Examples of U-Listed Pharmaceuticals





Examples of U-listed Pharmaceutical Wastes - **Toxic**

- Chloral Hydrate(CIV) U034
- *Chlorambucil** U035
- *Cyclophosphamide** U058
- *Daunomycin** U059
- *Diethylstilbestrol** U089
- *Melphalan** U150
- *Mitomycin C** U010

- *Streptozotocin** U206
- Lindane U129
- Saccharin U202
- Selenium Sulfide U205
- *Uracil Mustard** U237
- Warfarin<0.3% U248

➤ ***Eight chemotherapy agents are U-listed; one is P-listed.**

Examples of Characteristic HWs

- **Ignitable:** Rubbing Alcohol
- **Corrosive:** Compounding Chemicals
 - Sodium Hydroxide
 - Glacial Acetic Acid
- **Reactivity:** Nitroglycerin (includes packaging)
- **Toxicity:** (metals, VOCs, insecticides)
 - Chromium: multi-vitamins
 - Mercury (Thimerosal)
 - Selenium: multi-vitamins
 - Silver: burn creams
 - m-Cresol (diabetes medication)



EPA Final Rule

- Published in the [Federal Register](#) 2/22/2019.
- Special, streamlined requirements for handling hazardous waste pharmaceuticals.

Main Take-away:

- **“Sewering ban”** – drugs cannot be disposed of down the drain. Applies to everyone, regardless of hazardous waste generator status (e.g., CESQGs are not exempt).
- Effective Date: 8/21/2019 for all facilities and states including CT.



EPA Final Rule, cont.

These items are **NOT** effective in CT until further notice:

- Unused & non-dispensable prescription hazardous waste pharmaceuticals are subject to RCRA regulation, even if returned for credit.
- New rules accommodate reverse distribution BUT only meds that have a reasonable expectation for credit.

NOTE: patient meds in amber bottles and on “bingo” cards are not eligible for reverse distribution due to HPPA.



EPA Final Rule, cont.

These items are **NOT** effective in CT until further notice:

- Non-prescription pharmaceuticals and other retail items that have a reasonable expectation of being legitimately used/reused are not considered wastes.
- FDA-approved, OTC nicotine replacement therapies will no longer be subject to regulation as listed hazardous waste (P075).



CT DEEP Pharmaceutical Waste Policies

- **Sewering ban** – No drugs down the drain, no flushing!
(exception - saline, glucose solutions, etc. that do not contain pharmaceuticals).
- Other items in EPA rule **NOT** effective in CT at this time.
- DEEP to evaluate the EPA rule for future adoption. Would require change to CT Regulations.
- Unused Nicotine Patches – Hazardous Waste (used Not Hazardous Waste).
- Epinephrine Salts (P042) – Hazardous Waste



CT DEEP Pharmaceutical Waste Policies

- **Hazardous Waste pharmaceutical** - Must be transported by a licensed hazardous waste hauler to a licensed RCRA disposal facility on a manifest.
- **Controlled Substances / narcotics** - (ex. morphine, fentanyl, oxycodone, etc.) must be rendered unrecoverable and unrecognizable as per state regulations
- **Non-Hazardous Prescription & non-prescription medications** – (ex. Amoxicillin, Mylox, Mylanta, Zoloft) - Must be transported by a licensed hauler and disposed at a licensed facility (local RRF)
- **Biomedical Waste (BMW)** - must be disposed of in sharps container, red bag and treated and disposed of by licensed biomedical waste hauler/facility



Resources for further Information

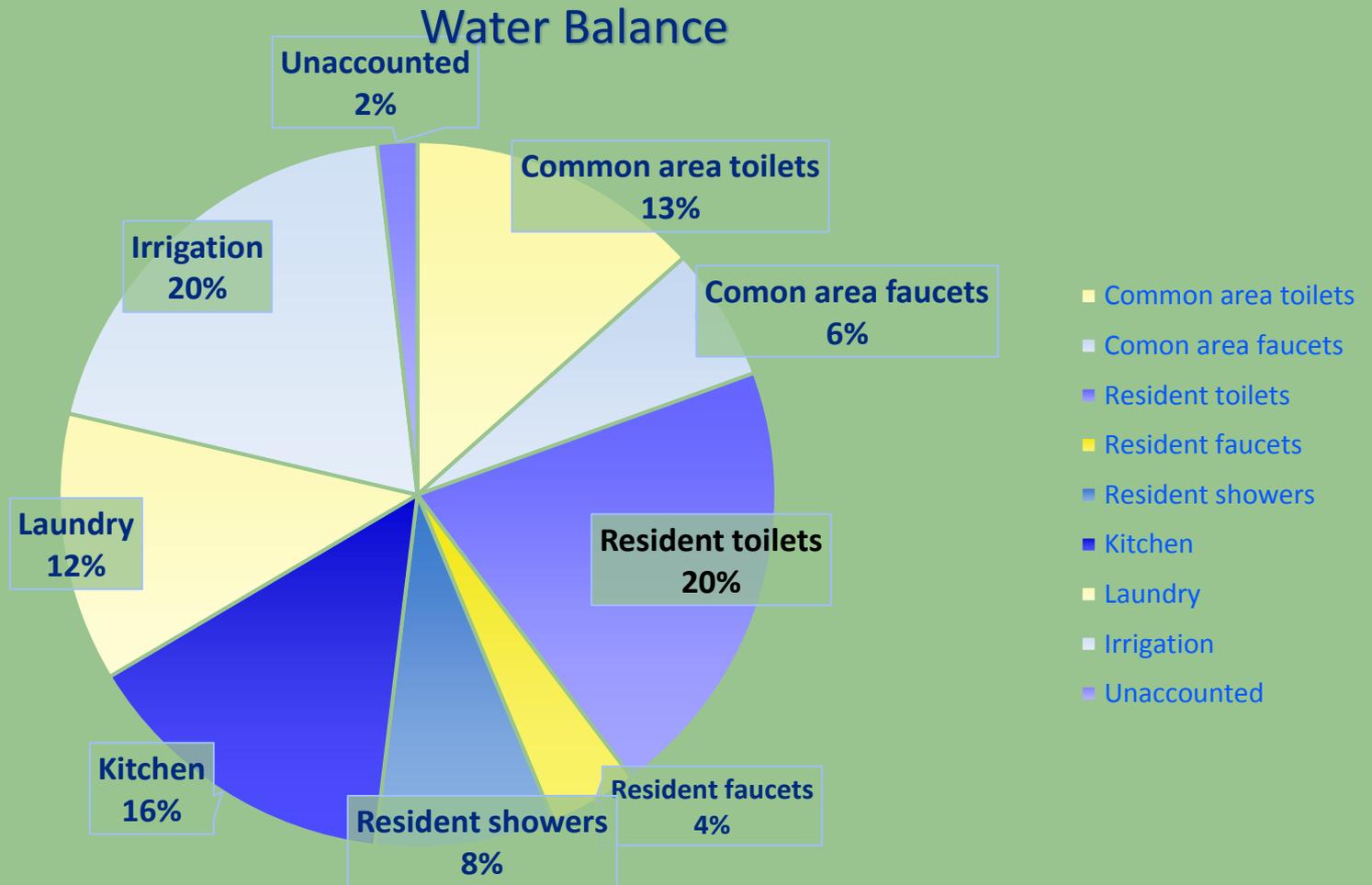
- US EPA Web Page on the Final Rule
 - Final Rule from the Federal Register, history/background, FAQs, webinar slides.
- US EPA Web Page – Management of Pharmaceutical Hazardous Waste
 - EPA guidance on the management of pharmaceutical waste.
- CT DEEP Information:
 - PowerPoint presentation on current requirements in CT (2014)
 - CT DEEP PowerPoint: Disposal of Pharmaceutical Residues (2009).

Resources, cont

- <https://www.epa.gov/hwgenerators/management-pharmaceutical-hazardous-waste>
- <https://www.stericycle.com/blog/ensure-safe-handing-of-hazardous-drugs>
- <http://www.wm.com/enterprise/healthcare/pharmaceutical-solutions/pharmaceutical-faqs.jsp>
- <https://www.epa.gov/hwgenerators/final-rule-management-standards-hazardous-waste-pharmaceuticals-and-amendment-p075>
- https://www.ct.gov/deep/lib/deep/waste_management_and_disposal/hazardous_waste/pharmaceutical_stake_holder_group/current_pharmaceutical_waste_liabilities_future_relief_6-11-14_charlotte_smith.pdf
- http://www.ct.gov/deep/lib/deep/p2/institution/connecticut_environmental_forum_rqb_9-2-09.pdf
- http://www.hercenter.org/hazmat/pharma_control_substances.html
- http://www.hercenter.org/assisted_living/wastes.html
- <http://www.hercenter.org/hazmat/pharma.php#>
- <http://www.hercenter.org/dental/pharma.htm>



Example of water usage at CT senior living facility



Reducing Water Use- Checklist & Tracking



How to Conserve Water at Skilled Nursing & Senior Living Facilities

Sustainability Checklist

Take Action!

Already Done

In Progress

Completed

Understand your water use.

- Review water bills for the past year to get an idea of your usage and costs. Quarterly billing will be less informative than monthly.
- Check your meter - if it's running continuously, there may be a leak. Smart meters provide volume of water used at the time-of-use, so you can better identify how much is used for dishwashing, outdoor watering, etc. Your water utility may be able to provide this device.
- Do a **water audit** to find out how much water your facility is using and where it might be used in excess – you may be able to cut your water use by 30%.
Sample self-audit forms can be found on-line at a number of sites, such as [Aquarion](#) and [Environmental Defense Fund](#) along with free tools to evaluate water usage.

Do some research. A helpful resource is [WaterSense at Work: Best Management Practices for Commercial & Institutional Facilities](#), a free guidebook that has general instructions for water efficiency at all sorts of commercial and medical facilities that are similar to skilled nursing and senior living facilities. This publication can provide a good understanding of the fixtures and equipment you have on-site, replacement/retrofit options, and ways to calculate usage, savings and pay-back.

Fix Leaks ASAP! A leaky faucet that drips at the rate of one drip per second can waste **3,000 gallons/yr. That's enough water for 180 showers!** Also check for [leaky showers and running toilets](#). Set up a schedule to check each fixture annually (or more frequently if necessary or required).
Leaks in the irrigations system, cooling tower and boiler can easily go unnoticed.

Lawns and gardens can use up a surprising amount of water. Watering earlier in the day and applying mulch each spring can minimize the amount of water lost to evaporation. [CT DEEP's website](#) has tips for sustainable lawn care practices. Consider growing drought-tolerant plants to minimize the amount of water that needs to be drawn for landscaping purposes.

If you're using an **automatic watering system** for lawns and gardens be sure it has a moisture sensor so lawns are getting watered only when needed. Check the irrigation system on a regular basis for leaks.



How to Conserve Water at Skilled Nursing & Senior Living Facilities

Sustainability Checklist

Want to track your water and cost savings?

CT DEEP can help you with that! Print the form below, fill it out and fax (860-424-4059) or email it to connie.mendolia@ct.gov. We'll help monitor the progress your facility has been making toward reducing water usage.

Name of facility: _____
Town facility is located in: _____
Number of beds: _____

From recent water bill:
Gallons used: _____
Date (month/year): _____

Toilets/Urinals:

# Standard toilets (>1.6 gpf):	# high efficiency (less than 1.6gpf)
# standard Urinals	# high efficiency urinals (.05 – 1.0 gpf)

Faucets/Shower heads:

# Standard faucets (>1.5 gpm):	# high efficiency faucets (less than 1.5gmp)
# standard shower heads (>2 gpm):	# high efficiency shower heads (less than 2 gpm)

Kitchen & Laundry:
EnergyStar dishwasher: Yes _____ No _____ Don't know _____
Ozone washing machine: Yes _____ No _____ Don't know _____

Lawns /gardens:
Automatic water system has moisture sensor: Yes _____ No _____ Don't know _____

Funding for this factsheet was provided by a PPIIS grant from US EPA. This fact sheet (created 9/2018) was funded can be found on the CT DEEP website at: https://www.ct.gov/deep/lib/deep/p2/institution/Water_Conservation_Sustainability_Checklist_Sept2018FINAL.pdf



Buying Green Products - EPPs

Items that reduce disposal costs, protect health and safety and the environment

Characteristics of Environmentally Preferable Products:

- Contains high recycled content
- Can be recycled
- Are reusable/contain reusable parts (e.g. rechargeable batteries)
- Has minimal packaging
- Is energy efficient and/or made with renewable energy
- Is less toxic to humans and the environment
- Is multifunctional



Connecticut Department of Energy and Environmental Protection

Checklist & Tracking



Buying Green Products for Skilled Nursing & Senior Living Facilities

Sustainability Checklist



Take Action—Buy Smart, Buy Green!

Already done
 In Progress
 Completed

Opt for safer cleaning supplies for areas and surfaces where disinfecting or sanitizing is not required, such as glass /window cleaning, floor stripping, furniture polishing, oven cleaning, offices and public areas. Conventional cleaning products may contain chemicals that lead to short-term irritation and long term health effects.

- Find certified green cleaners at [Green Seal](#), [Ecologo](#) and [EPA's Safer Choice](#).
- [Health Care Without Harm](#) has put together [10 Ways to Find Safer & Greener Cleaners](#) and [Cleaning in Health Care Facilities](#)
- Purchase supplies in bulk, opting for highly concentrated cleaning products that are dispensed through portion control equipment.

Choose green alternatives for paint and other materials. Stick to paints, carpets, and flooring that are low in VOCs and made from recycled materials if possible. This will reduce the amount of air pollution that patients and staff are exposed to and lower your facility's environmental footprint.

Stay away from using products that contain fragrances to mask odors since they likely contain VOCs, such as formaldehyde, benzene, acetate, and ethanol that easily enter the air as a gas. These VOCs can become more concentrated indoors, which can cause adverse health effects such as eye irritation, headaches, nausea, and trouble breathing. Fragrances can come from air fresheners, scented cleaning products, scented skin lotions, hair products, shaving creams and clothes that have been laundered with scented detergents, fabric softeners, or dryer sheets. Purchase products that are fragrance-free. Eliminate the source of the odor by cleaning, disinfecting and removing trash.

Skip disposable products whenever possible. Disposable products tend to be made of [plastic](#), much escaping collection and ending up polluting the ocean. Substitutions like paper for plastic straws or opting for products that can be used multiple times also cut waste. Make use of the [Green Procurement Compilation website](#) and the [Responsible Purchasing Network](#) to find alternatives to disposable products.

Choose products that have minimal packaging. You may need to work with your vendor and/or group purchasing agent to request items that have less packaging. Packaging ends up in your trash, so in the end, this can save you money on disposal costs.



Buying Green Products for Skilled Nursing & Senior Living Facilities

Sustainability Checklist

Want to track your toxics reduction?

CT DEEP can help you with that! Print the form below, fill it out and fax (860-424-4059) or email it to connie.mendolia@ct.gov. We'll help monitor the progress your facility has been making toward reducing toxics.

Building area: _____ ft²

Does your facility have a mixing station for cleaning products? Yes / No

Do you use microfiber mops and cloths to clean your facility? Yes/ No

<u>Cleaning products:</u>	<u>GreenSeal/ECOLOGO certified?</u>	<u>Product Name</u>
Microfiber cloths/mops	Yes / No	_____
Floor cleaner	Yes / No	_____
Glass cleaner	Yes / No	_____
Bathroom cleaner	Yes / No	_____
All-purpose cleaner	Yes / No	_____
Wood furniture polish	Yes / No	_____



Energy Efficiency & Benchmarking

Energize CT - Energy Audits/EE projects and renewables

- Funding cuts in 2018, little was done; funding levels better in 2019.

EPA Portfolio Manager

- 9 facilities benchmarked by Amy Thompson last year and 1 by ISE (ECSU) the year before.
- Electricity data being auto input from utility companies.
 - Have facilities reviewed data/reports every 6 – 12 months?
 - **Has Benchmarking been useful in considering new EE projects?**
 - score of 75 or higher qualifies for EPA EnergyStar Certification
 - can also track water usage and solid waste



Eversource Energy Efficiency

Energize CT - Energy Audits/EE projects:

- Fully funded 2019 - Emphasis on comprehensive projects and gas saving measures
- Retrofit Electric incentives range \$.25/kWh to \$.65/kWh
- Retrofit Gas incentives range \$3.00/CCF to \$6.00/CCF
- Major Renovation and New Construction incentives also available

Energy Data Benchmarking:

- Benchmarking assistance available via:
 - Business Sustainability Challenge or Strategic Energy Management initiative in 2019
 - Focus is on large facilities

Contact:

Hannah.Savage@Eversource.com, Energy Efficiency Consultant



Connecticut Department of Energy and Environmental Protection

EnergizeCT Offerings



2019 Commercial & Industrial Programs

EVERSOURCE



Let us help improve your business' energy performance. We have programs to help cover the costs of reducing the amount of energy you use, in turn reducing your energy and operating costs. For additional information on these programs call 877 WISE USE (947-3873).

Initiatives	Eligibility	Incentives
Energy Conscious Blueprint	Electric and firm natural gas Commercial and Industrial (C&I) customers engaged in new construction, planned remodeling, major renovations and new equipment.	Up to 95% of incremental cost for new construction and major renovation projects. Up to 75% of incremental cost for equipment replacement. Design & building certification incentives are also available.
Energy Opportunities	All electric and firm natural gas C&I customers, including municipalities, replacing existing inefficient technologies such as lighting and lighting controls, motors and controls, process-related equipment and HVAC equipment and controls.	Incentives up to 25% for single end use projects, up to 45% for multiple end use projects, and up to 65% for comprehensive projects (three or more end uses; advanced lighting controls are required for lighting end uses).
Small Business Energy Advantage	C&I customers with up to 200 kW of average peak demand.	Incentives up to 25% for single end use projects, up to 45% for multiple end use projects, and up to 65% for comprehensive projects (three or more end uses; advanced lighting controls are required for lighting end uses). Interest-free financing for up to 48 months available to qualified customers. Consult your Utility for details.
Rebates	Rebates offer fast and convenient incentives for a variety of electric and gas measures.	Visit EnergizeCT.com/CI-rebates for a list of rebates on qualifying heating, ventilation and air conditioning, kitchen equipment, water heater as well as specific program offerings.
BUSINESS & ENERGY SUSTAINABILITY OFFERINGS		



Connecticut Department of Energy and Environmental Protection

Financing Options

Connecticut Green Bank

- **Commercial Property Assessed Clean Energy (C-PACE)**
 - Provides long-term, low-cost financing to commercial property owners to make energy-saving improvements
 - Energy efficiency upgrades and renewable energy covered
 - Projects reviewed by 3rd party to vet savings exceed the investment
 - C-PACE is repaid through a benefit assessment placed on the property. Billings and collections are handled by the town's tax collector
 - If a nursing or long-term care facility is a non-profit, they can qualify for C-PACE financing.

Can contact nicholas.zuba@ctgreenbank.com for more info.



Connecticut Department of Energy and Environmental Protection



- For more info contact:
 - Connie.Mendolia@ct.gov
 - Pharmaceutical disposal:
 - Michele.DiNoia@ct.gov
 - Ross.Bunnell@ct.gov
 - Mark.Latham@ct.gov
 - Energy Efficiency Programs and Financing:
 - 877-Wise Use
 - Hannah.Savage@eversource.com
 - Nicholas.Zuba@ctgreenbank.com

