

US EPA ARCHIVE DOCUMENT

# Medical Waste

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## Main points of this presentation.

Medical waste is part of a larger solid waste problem.

Most waste generated in a healthcare facility can be classified as medical waste.

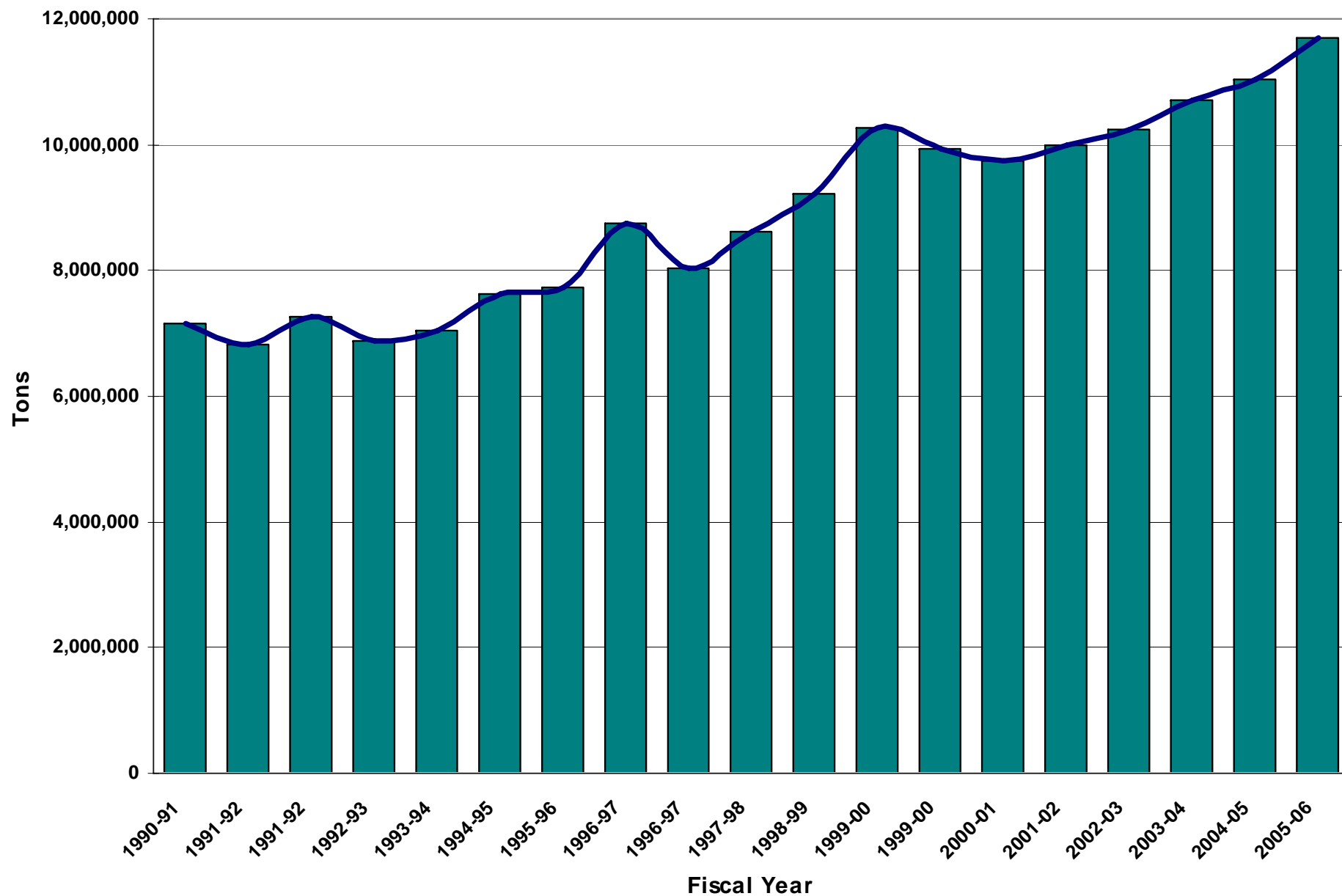
The state has a very narrow definition for what is considered to be regulated medical waste.

Healthcare facilities often spend more than is necessary to treat medical waste that is not defined as regulated. This increases the cost of healthcare and wastes resources.

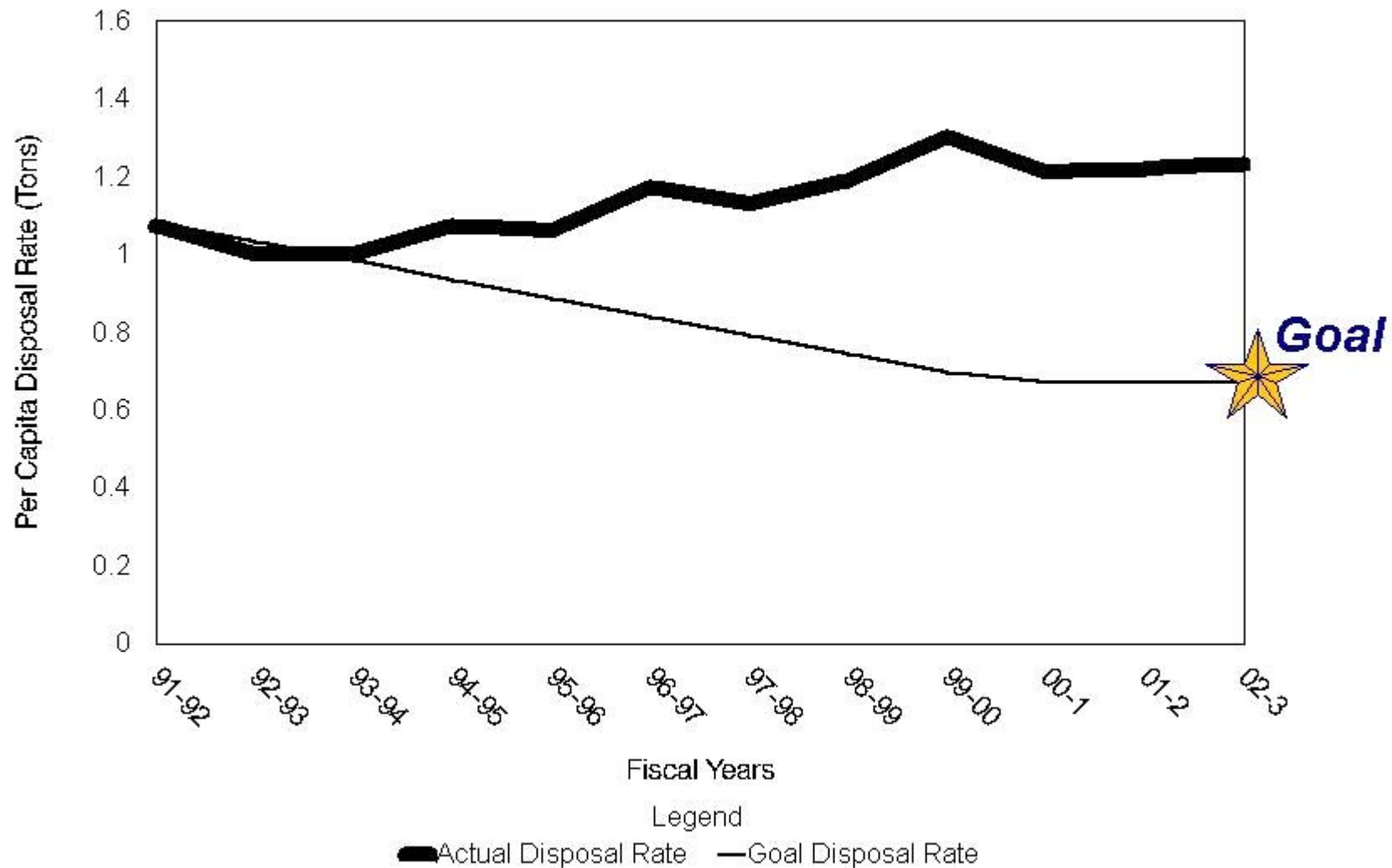
Strategies exist to help minimize the amount of wastes and money that healthcare facilities spend on medical waste treatment.

Know where to get more info, if you need it.

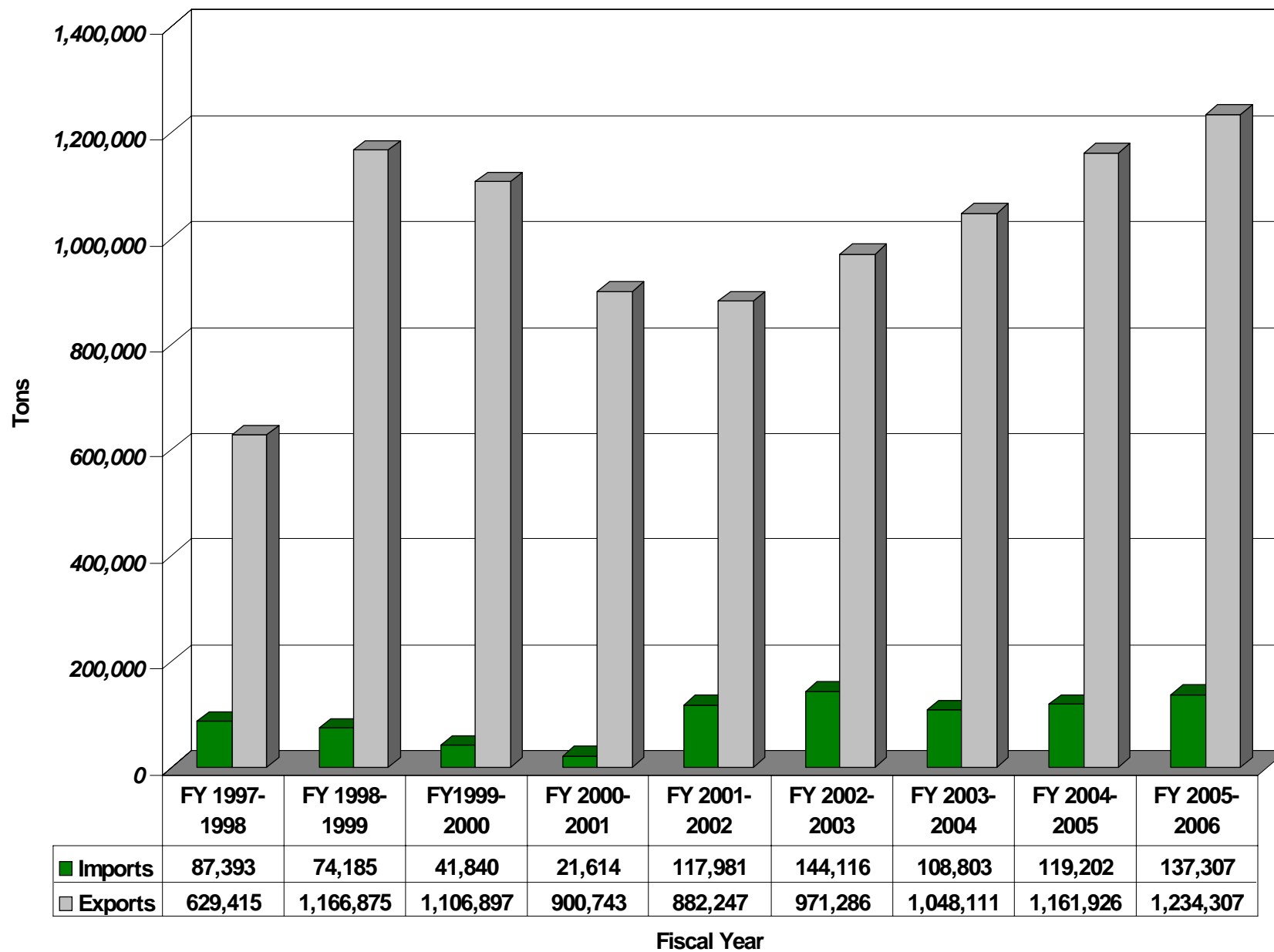
# Tons of Solid Waste Disposed of by North Carolina



## Progress Towards 40% Waste Reduction Goal



## Actual Imports / Exports



- North Carolina is a net exporter of solid waste. Much of it going to Virginia and South Carolina.
- In 1997, the Supreme Court determined that garbage was a commodity that could be traded across state lines.
- Landfills are becoming increasingly difficult to site and expensive to construct.

- Landfill operators have the right to reject any waste for disposal in their landfill, even if state regulations allow landfill disposal of such wastes.
- Modern day landfills are not dumps.
  - Highly regulated and highly engineered, ongoing construction projects for the life of the landfill.
  - No scavenging is ever allowed.
  - All wastes are required to be covered with soil at end of the work day.

# Medical Waste

Medical waste means any solid waste which is generated in the diagnosis, treatment, or immunization of human beings or animals.

(does not mention care and feeding)

*General Statutes 130A-309.26*

*15A NCAC 13B .1200*

Biohazardous waste generated outside this definition is not considered to be medical waste.

for example - trauma scenes

the exception is animals that died from a zoonotic disease (*e.g.-rabies, BSE*) .

## Regulated Medical Waste

- Regulated medical waste means blood and body fluids in individual containers in volumes greater than 20 ml (about the size of a test tube), microbiological waste, and pathological waste.
- Roughly 9 percent to 15 percent of the waste stream at hospitals is regulated medical waste.
- Regulated medical waste must be treated prior to disposal.

## Blood and Body Fluids

- Blood and body fluids means liquid blood, serum, plasma, other blood products, emulsified human tissue, spinal fluids and pleural and peritoneal fluids.
- Dialysates, urine, and feces are not blood or body fluids under this definition.
- Preferred method of treatment- dispose of in a commode.

## Microbiological Waste

- Microbiological waste means cultures and stocks of infectious agents, including, but not limited to, specimens from medical, pathological, pharmaceutical, research, commercial and industrial laboratories.
- Can be autoclaved, incinerated, or treated with disinfectant chemicals (bleach 1:5).

## Pathological Waste

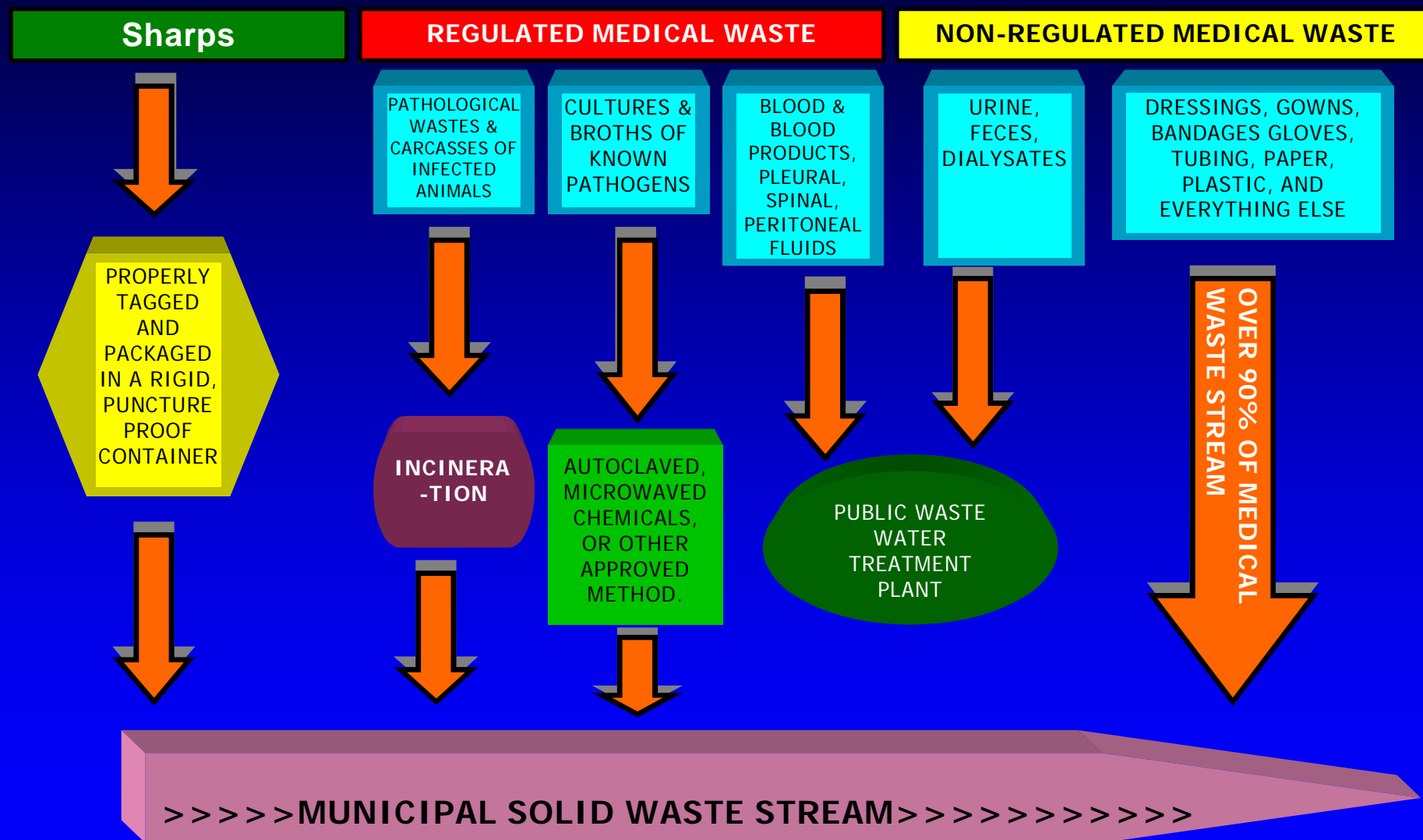
- Pathological waste means human tissues, organs and body parts; and the carcasses of animals that were ***known*** to have been exposed to pathogens ***or that died*** of a ***known*** or ***suspected*** disease transmissible to humans.
- Only method of treatment- incineration (and other approved methods).

## Disposal of Sharps

- The rules do not require treatment of sharps before disposal.
- They must be packaged in a container that is rigid, leak-proof when in an upright position and puncture resistant.
- The package then may be disposed of with general solid waste.

# NC DENR MEDICAL WASTE MANAGEMENT

## INSTITUTIONALLY GENERATED MEDICAL WASTE



**For More Info: [www.wastenotnc.org/programs/medical](http://www.wastenotnc.org/programs/medical)**

## Not Defined as RMW in NC

- Medical waste such as dressings and bandages (even when blood soaked), sponges, disposable instruments, used gloves, and tubing.
- These items are not included in the definition of regulated medical waste and may be disposed of without treatment in the general solid waste stream.
- Many generators choose to ship and incinerate non-regulated medical waste such as gloves, bloody bandages, dressings, and tubing.

- Household waste (home injectors) is not included in the definition of medical waste and is not subject to the medical waste management rules.
- Household garbage has on average 100 times more pathogenic microorganisms than general medical waste.
- Generators are responsible for ensuring that waste is disposed of properly.
- There is a "50 Pound per Month" record-keeping exemption for small generators.

- Some facilities, such as long-term care facilities, generate medical waste but little or no regulated medical waste.
- Hospitals are only 3% of generators, but account for 70% of medical waste.
- Alternative medical waste treatment technologies are listed on the website: [wastenotnc.org/programs/medical](http://wastenotnc.org/programs/medical)

## OSHA

- OSHA specifies certain features of the regulated waste containers, including appropriate tagging. This is meant to protect waste industry workers.
- OSHA definition of regulated waste is not intended to designate waste that must be incinerated or otherwise treated before landfilling. Does not address disposal.
- OSHA - definition of regulated waste may include waste such as bloody gauze, blood saturated dressings, used gloves, or tubing.

- US EPA does not regulate medical waste in North Carolina.
- North Carolina does not require that sharps be incinerated.
- North Carolina does not prohibit landfilling of items that contacted blood and body fluids (trauma scenes).
- Transport of regulated medical waste must comply with US Dept. of Transportation and NC Waste Management rules.

- North Carolina does not require cradle to grave tracking of medical waste.

This means we do not know who the generators and transporters are. Contact a regulated waste treatment provider to find a transporter.

- Waste Management regulates (permits and inspects) commercial medical waste treatment providers.

## Reduce and Reuse...

- Eliminate unused items from custom surgical packs (once pack is opened, unused items are discarded).
- Identify items that are not used regularly enough to justify inclusion in various packs.
- Tell manufacturer when one outdate item causes entire pack to be outdated (e.g. tetracaine in spinal tray).
- Estimated cost savings \$30,000/yr
- Est. waste prevention: 11,000 lbs/yr

- Purchase washable surgical and isolation gowns, and sterilization trays.
- Convert surgical drapes into biopsy cloths.
- Consider switching to reusable medical instruments (e.g. stainless steel trays and laparoscopic instruments).
- Sanitize and reuse plastic fracture pans.
- Sanitize and reuse graduated measuring containers.
- Estimated cost savings: \$60,000/yr
- Est. waste prevention: 50,000 lbs/yr

- Determine if cloth towels can be reused and later sold as rags.
- Use cloth diapers.
- Use worn diapers as cleaning rags.
- Contract with haulers of RMW to provide reusable containers for “red bag” wastes and sharps.
- Estimated cost savings: \$200,000/yr
- Est. waste prevention: 230,000 lbs/yr

Source: Ca. Waste Prevention Exchange

# RECYCLE

- Organizations exist that recycle unused medical supplies- ace bandages to sutures.
- Accept used but working medical equipment - autoclaves to wheelchairs.
- REMEDY - find a link at our website.
- HERO - Healthcare Equipment and Recycling Organization at [greennature.com](http://greennature.com)
- Supplies and equipment donated to national and international charities.

## Benefits of Recycling

- Unused medical supplies are diverted to needy charities around the world. REMEDY attorneys can help resolve liability issues.
- Hospitals save money on waste that does not need to be treated and taken to the landfill.
- Valuable landfill space is preserved.

Incinerators are regulated by three DENR divisions:

1) Division of Waste Management

Solid waste - due to ash. Ash is tested and if found to be high in hazardous materials then it is disposed of at hazardous waste landfill.

2) Division of Water Quality

Water Quality - due to water that is used to quench ash. It is taken to waste water treatment plant.

3) Division of Air Quality

Air Quality - due to effluent from the smokestack.

## Bottom Line...

- The cost of treating medical waste that does not require treatment adds to the cost of healthcare.
- 1.75 cents/lb. vs 55 cents/lb.
- Waste reduction strategies preserve valuable landfill space and save money.

# Where to get more information?

Division of Waste Management website:  
[wastenotnc.org/programs/medical](http://wastenotnc.org/programs/medical)  
[William.Patrakis@ncmail.net](mailto:William.Patrakis@ncmail.net)

NC Division of Pollution Prevention  
[p2pays.org](http://p2pays.org)  
Thank You!