



Waste Reduction and Recycling

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Learning Objectives

- Understand mission of Practice Greenhealth and the Healthier Hospitals Initiative
- Understand the definitions of different types of waste generated by healthcare organizations.
- Understand the value of reducing waste.
- Understand red bag waste reduction.
- Understand how a reusable sharps container program operates.
- Recognize the potential for savings through transitioning away from certain disposables to reusable items.
- Take Away: How to increase recycling in the healthcare environment



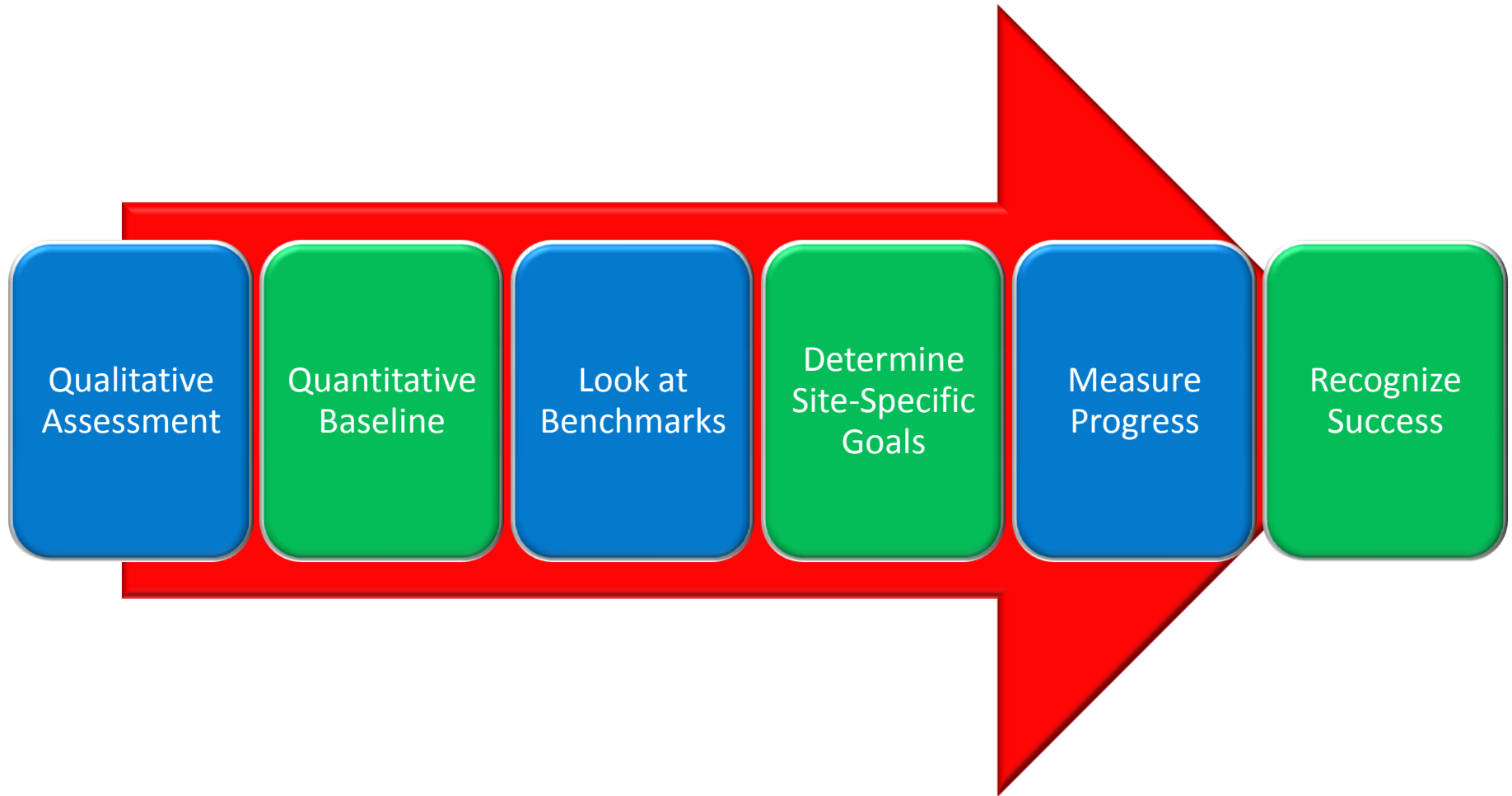
A Learning Community

- Educate
- Motivate
- Celebrate

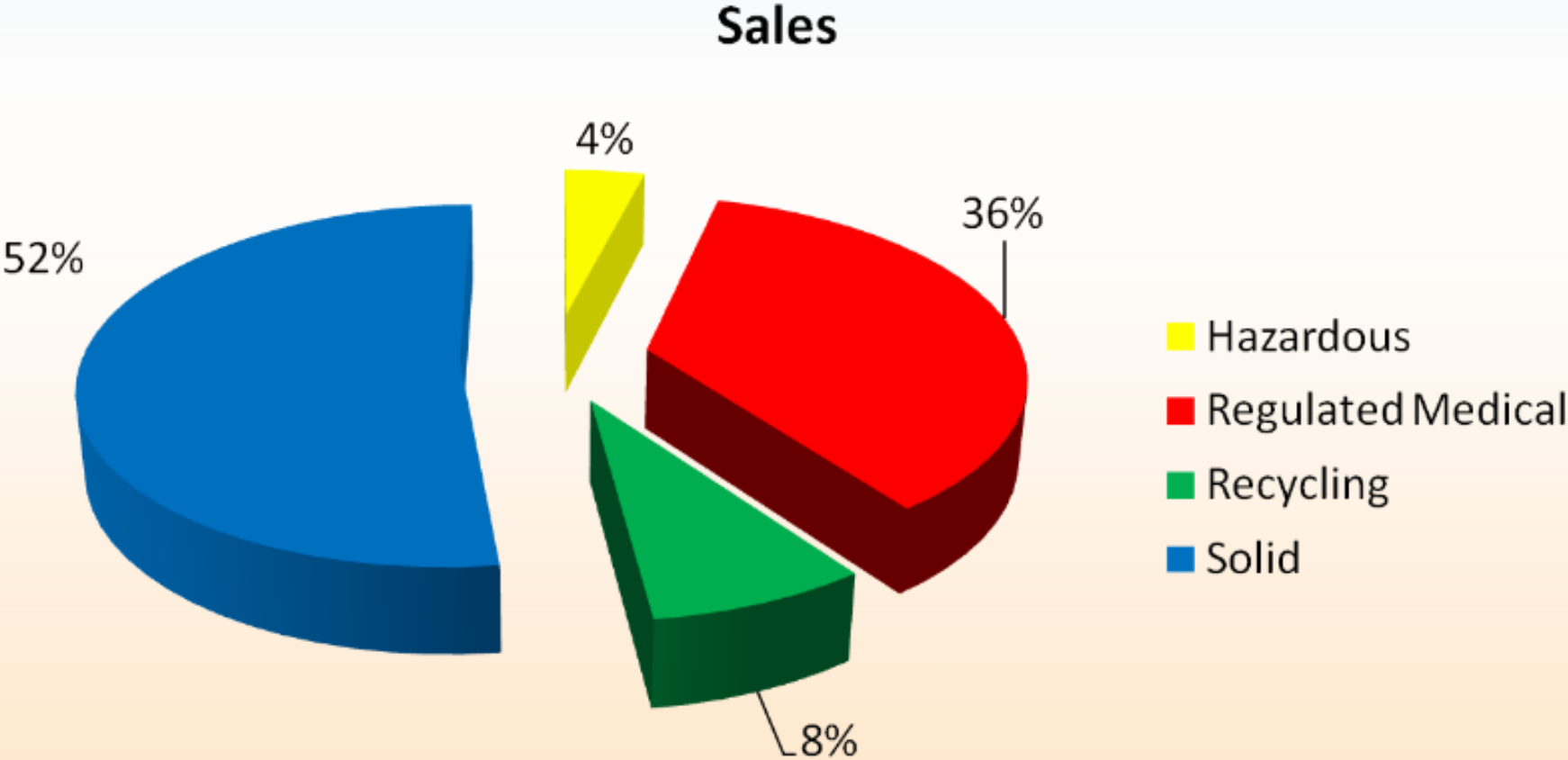
10-Steps Overview

1. Identify the Problem
2. Set Goals . . . Prioritize
3. Understand Stakeholder Needs/Roles
4. Build a Process
5. Establish Policies
6. Design Procedures
7. Assemble Operations Guide
8. Conduct Training
9. Evaluate Outcomes
10. Continuously Improve (Next Steps)

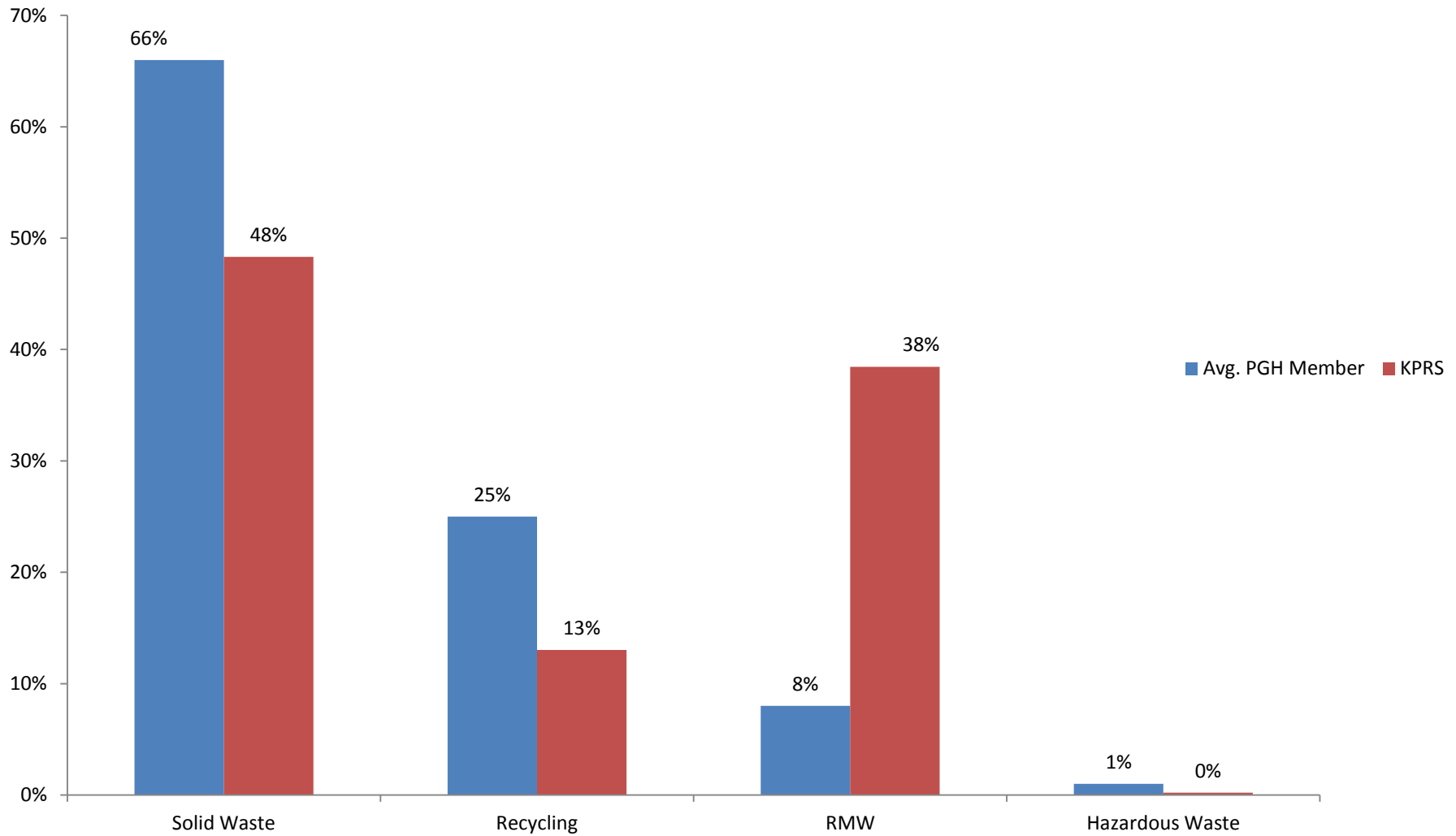
Develop a Process



What's Your Waste Profile?



Waste Profile Comparison



Why Worry about Waste?

- Regulatory Compliance
- EPA, DOT, OSHA, local waste and water jurisdictions, Joint Commission
- Health and Safety
- Exposure risks to patients, employees, visitors
- Impact on local community and environment
- Emissions to air, water, land
- Waste is Costly!



A Few Waste Stats



- Almost 80% of packaging waste from procedure generated before the patient enters the OR
- Approximately 20% of surgical waste is blue wrap
- Approximately 40% of waste is fluid canisters

Hospital Waste Reduction Recycle and Reuse

MAKE THE RIGHT CHOICE
*Respect your coworkers, patients and the environment —
Follow these guidelines for proper waste segregation*

Be Sharp with Sharps!
Syringes, needles, slides, test tubes, scissors, blades and anything that can cut or puncture the skin must be discarded into a sharps container.

Beware of Mercury!
Mercury is a hazardous material. To report a spill or to discard mercury waste such as thermometers or blood pressure units, contact Environmental Services.

Put Waste in its Place!
Use red bags only for true Regulated Medical Waste: blood-soaked materials, blood bags, suction canisters, tissues from surgery and autopsy, cultures and stocks of infectious agents, and items saturated with body fluids as defined by OSHA.

Wanted: Soiled Linen!
Place soiled or damaged linen in the designated linen hampers. Linen should never go into a waste receptacle.

Recycle Paper!
Discard office paper into recycling bins, which are for white and colored paper, faxes, Post-it notes, junk mail, newspapers, magazines, forms, file folders and more.

Put Waste in its Place!
Items such as nonbloody IV bags and tubing, gloves, packaging, urine, feces, diapers, food and protective equipment should go in the regular garbage.

Continuum Health Partners is a proud member of Health Care Without Harm. www.noharm.org

Thanks for doing your part!

Continuum Health Partners, Inc.
Work for us! | St. Luke's | Living Forward | Get Free & Fair

Printed on recycled paper

- The Practice Greenhealth Moto

Economics of Recycling

	Waste	Recycling*
• COSTS (\$/ton)		
• Processing	\$10	\$30
• Transport/Disposal	\$50	\$10
• Revenue	\$0	(\$50)
Net Cost/(Revenue)	\$60	(\$10)

- *Sample assumes baled corrugated cardboard

Set Program Goals

- Maintain regulatory compliance
- Add community/environmental health and safety to hospital Quality & Safety mission
- Standardize management practices between facilities
- Measure cost savings
- Reduce waste volume
- Eliminate most toxic or hazardous materials
- Get Stakeholder buy in
- Hire consultants or experts if needed.

Learn from our waste



Total waste system management approach to waste handling and disposal

- Reduce waste at the point of generation
- Track compliance, cost and volume through:
 - Auditing
 - Vendor performance monitoring
 - Metrics tracking by volume or frequency
 - Training and education for handlers of waste, and those who produce waste

Integrated Operations

Integrated Operations Crosses Departmental Lines

What makes a program stick?

- Structure
- Reporting
- Committees
- Education, Training
- Policy Development



Policy & Training

- Committee Work, Review and Policy Development
- Retrain current staff with agreed upon definition of RMW, Hazardous Waste, Recyclable materials.
- Make staff aware of facility's waste reduction goals.
- Departmental role in their own waste generation and associated disposal costs.
- Develop incentives for department heads.
- Communication Plan, Signage

Facilities Pay for Waste Three Times

1. Product Purchasing
2. Materials Handling- labor, equipment and maintenance
3. Transportation and Waste disposal



Mapping Waste- What and Where

- Laboratories (research, clinical)
- In-patient areas (ICU, GPU)
- Patient Treatment (radiology, gastro, cardio, dialysis, etc))
- Surgery
- Emergency Dept.
- Facilities & maintenance
- Materials management
- Hazardous waste (RCRA)
- Regulated medical waste (red bags, sharps, pathological)
- Liquid Industrial Waste (used oil, aqueous lab waste)
- Universal waste (lamps, batteries, electronics)
- Pharmaceuticals
- Confidential (paper, electronic media)
- Pharmacies
- Bio-med engineering
- Kitchen/Cafeteria
- Administrative

What are the challenges?

- Waste handling processes not always centralized
- Consistent education is difficult Most facilities lack waste “content experts” and the “rules” can get complicated!
- Compliance for management of regulated wastes threatened

Sustainability goals are hard to set, achieve & measure

Recycling Challenges

- Space...always at a premium!
- Consider commingled recyclables
- Lack of “full-service” haulers
- Sanitation and fire safety
- Economy of Scale:
 - Larger facility can stockpile in roll-offs, or using
 - crushing/compacting equipment
 - Smaller facility pays for recycling pick up



Vendor Contract Management

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"The paper and ink content is within acceptable norms, but the contract itself appears to have too many clauses."

Facility Design

- Establish a construction and demolition recycling policy
- Design docks, soiled utility rooms, cafeterias, public areas to accommodate recycling.
- Work with design team and show the business case for capital investment for recycling



Standardizing Procedures

- Describe generating, handling, risks and disposal
- options for the various wastes generated □
- Map the Waste Stream Flow
- Waste type
- Regulatory requirements
- Points of Generation
- Handling, transport and disposal “best practices” for safety, compliance

What is in a procedure?

- Waste stream background/definitions
- Safety requirements and PPE
- Step-by-step management
- Necessary equipment/ containers
- Waste handlers/service vendors roles
- Forms for record-keeping and management
- Training and education
- Who to contact

Step-by step details

- Waste separation guidance
- Meets regulatory requirements
- Assures the safety of employees and other handlers
- Color code system
- Labeling requirements
- Informs about a hazard; date; generator info
- Designated storage and accumulation areas
- Soiled utility rooms or trash chute rooms
- Safely contain and consolidate waste

Step by step continued

In-house transport of waste

- Safe delivery and transfer to designated waste management areas

Packaging/container requirements

- Minimize the risk for release of potentially infectious materials or toxic/hazardous agents
- Ability to withstand bursting and leaking (integrity)
- Meets OSHA and the Department of Transportation requirements

Step by Step Continued

Waste treatment and disposal requirements

- Pre-processing such as sterilization, bulking, baling, shredding, compacting, distilling prior to final disposition

Equipment Operation and Maintenance (if

- applicable)
- Baler, compactor, autoclave, shredder, loader, forklift, vehicles

Waste Segregation – Best Practices

Implement an Infrastructure Conducive to Waste Minimization-

Color coded, strategically placed and well labeled containers for:

- Solid Waste
- Infectious Waste
- Hazardous Waste
- Recycling
- Universal Wastes
- Others





Is this sustainable?

Practice Greenhealth Greening the Operating Room Initiative



PHOTO COURTESY OF REAUMONT HOSPITAL

Greening the OR can save \$\$\$ annually

- \$86,460 saved on fluid management
- \$400,000 on SUD reprocessing
- \$15,000 on RMW minimization
- \$6,000 on recycling in the OR
- \$16,186 on rigid sterilization containers
- \$116,000 through OR kit reformulation



Where to Start?



Greening the Operating Room™ Checklist

Hospitals rank among the largest users of energy, highest producers of waste and are a major consumer of chemicals, paper, water and other resources, resulting in an industry with a huge environmental footprint. In an effort to reduce the impact on the environment, healthcare organizations are asking for information on best practices, guidance in establishing green practices and methods to measure success. They are also asking for guidance on where to focus their efforts. As a primary source of hospital revenue, one of the largest users of supplies and generators of hospital waste, the operating room (OR) is a strategic priority for any hospital hoping to reduce its impact on the environment. This tool is designed to assist health care providers in assessing the status of environmental best practices in the OR.

For organizations just beginning to identify sustainability programs in the operating room, this tool will illustrate where opportunities exist. For those further along, it can highlight products, processes and elements that may have been overlooked. Whether your organization is just beginning its sustainability journey or is looking for ways to assess and measure progress, this tool was designed for you.



Facility Name _____

Contact Name _____ Title _____

Phone _____ Email _____ Date _____

Instructions: Place an uppercase 'X' in the appropriate box next to each activity. Please only use one 'X' per line.

Greening the OR Checklist	Fully Established (>1 Year)	Implementing In Progress	Not Implemented	Unknown if the Program/Process	Not applicable (NA)	Additional Notes
Organizational Development						
Endorse and participate in Practice Greenhealth's Greening the OR™ Initiative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Build a Green Team specific to Surgical Services/OR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Educate OR staff on benefits of greening and opportunities for cost and waste reduction and safety benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Resources include:

- Basic presentation on Greening the OR[®]
- Business Case for Greening the OR[®]
- Greening the OR[®] Checklist Tool
- Implementation Modules for Best Practices
- Case Studies
- Greening the OR[®] Webinar Series



How much RMW are you currently generating?

- What percentage of your total waste is RMW?
- Less than 10% should be going into red bags.
- Do staff understand that RMW costs between 5-10 times MORE than solid waste?

Reusable Products

Supply Chain: Include waste fees when comparing disposable versus reusable products.



Suction Canisters



40% of Operating Room Waste is from suction Canisters!

Potential for occupational Exposure in transport.

<http://mntap.umn.edu/health/91-Canister.htm>

Disposable vs. Reusable Sharps Containers

Disposable

- Nurses were responsible for changing containers
- Containers often overfilled.
- Containers often removed without being closed properly.
- Disposable filled containers were stored in the soiled utility rooms
- Too many employees handling sharps containers.
- One hospital incinerated approximately 2,700 disposable sharps containers per month at one site alone!

Reusable

- Vendor offered a full-service sharps management service.
- One dedicated person for handling sharps.
- Much fewer incidents of overfilled containers.
- Nicer looking container
- Reduced needle sticks associated with waste
- Elimination of 2,700 containers per month!
- Reduced liability
- Positive feedback from staff.

Operating Room Waste Reduction

- Blue wrap prevention at Boulder Community Hospital
 - Boulder Community Hospital worked with EPA on a zero waste program.
 - Conducted a waste audit and identified “blue wrap” as a significant portion of the waste stream.
 - Invested in durable, reusable containers for sterilization of instruments in the OR Setting.



Hard Cases Instead of Blue Wrap



Reusable Containers

- Invested in hard cases - \$120,000 one time cost.
- Reduced disposable blue wrap purchase from \$250,000 in 2003 to \$60,000 in 2005.
- This does not include waste removal fee reduction.
- Manufacturers of surgical equipment are now required to provide the durable container as part of the equipment purchase.

Cardboard



Plastics



Co-Mingled Single Sort

- Cardboard
- Mixed Paper (newspaper, non-confidential office paper, junk mail)
- Bottles & Cans (#1 & #2 plastic, aluminum cans, steel cans)
- **Advanced:** Glass, other plastics, confidential documents, books

Scrap Metals



Universal Waste



Hazardous Waste

Resource Conservation and Recovery Act (RCRA)

- Listed, or characteristically hazardous chemicals
- Just about anything that's corrosive, explosive, reactive or can burn
- Permits, licenses required
- Safety and compliance audits
- Recordkeeping, labeling
- DOT and RCRA training



HAZARDOUS WASTE
STORAGE AREA
UNAUTHORIZED PERSONNEL KEEP OUT

Compost



Training

Training of stakeholders by waste stream, facility

- Bring stakeholders together
- Shared approach
- Introduce system-wide policies
- Allow customization of procedures and forms by facilities as needed



INFORMATION



PERFORMANCE

Continuing Education

- Regular audits of recycling
- accumulation areas
- Audit Recycling vendor
- processing facility
- Train and re-train users
- Fact Sheets and posters
- Recruit “champions” on each units to help with monitoring

Resource Management



Step by Step to RMW Reduction

- Infection Control Committee – Policy Development
- Gather baseline data – Project savings
- Reduce red bags BEFORE evaluating onsite treatment technologies
- Review waste contracts – non-incineration treatment of RMW.
- Consider on-site versus off-site.
- Review sharps contracts.

Regulated Medical Waste Reduction Opportunities

- **Reusables** – Shipping containers, Sharps containers, gowns, isolation gowns, fluid management, single use device reprocessing.
- **Improved segregation** - incentives, training, education, monitoring
- Non-incineration treatment technology
- Fluid management systems
- Proper segregation of mercury, pharmaceuticals, formalin.

What goes in a red bag anyway?*

YES! RED BAG

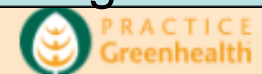
- Blood, Products of Blood
- Anything caked, soaked or dripping in blood
- Tissues from surgery and autopsy
- Cultures and stocks of infectious agents and discarded vaccines.
- Suction canisters with any fluid. Hemovac and pleurovac drainage.
- Operating room waste saturated with body fluids as defined by OSHA.
- Waste from patients isolated with HIGHLY communicable diseases. (These are CDC Class IV definitions)
- Sharps, including syringes and unused sharps.

NO! Put in Clear Bag

- IV Bags, tubing, foley bags
- Non bloody gloves
- Packaging,
- Urine-soaked waste, feces, vomit
- Blood-tainted waste
- (Note distinction between blood-soaked and blood-tainted. A little bit of blood on an item can go in the regular waste stream.)

Questions? Call Waste Manager

* Check your local regulations



Waste Segregation – Implementation

- Present Plan
- Form a team
- Define waste streams
- Survey Facility
- Develop Materials
- Purchase equipment, supplies.
- Issue Memo
- Container placement
- Properly Labeled, Signage
- Proper placement
- Training (never ends.)
- Monitoring and reporting
- Continue!



Container Placement

- Red bags containers should be covered to reduce solid waste casually tossed in.
- Remove red bags from under hand-washing sinks, non-critical care patient areas, hallways and other areas where people are likely to dispose of solid waste.
- Where there ARE red bags, locate a solid waste container directly adjacent so staff make conscious disposal and segregation decisions.



Container Placement and Signage



Hackensack University
Medical Center



**Overusing red bags
is like throwing
movie tickets in the
garbage!!**

25¢ of every \$1 saved through improved red bag segregation goes towards movie tickets to give back to the staff.

So **THINK** before you put that regular waste in the red bag! Reduce red bags and go to the movies.

Obstacles

- Fear of Waste
- Lack of training
- Old habits
- No clear can available
- Overfilled clear lined can
- Ran out of clear bags!
- Housekeeper collecting clear bags into red bag.
- Use closest can
- Change of Staff
- No time
- No can available
- Confusion of Isolation rooms
- Confusion over body fluids

Problem Identification and Resolution Plan

- You **WILL** encounter mistakes.
- Conduct tours of trash areas monthly.
- Develop a mechanism to report concerns or issues (e.g. photo along with written report of issue and responsible floor/dept/unit)
- Re-educate promptly.
Hold in-service with responsible unit to explain problem and proper segregation technique.
- Engage a nurse leader to help communicate program.



Track Progress, Report Successes and Reward Staff!

- Make sure to track waste generation rates in a reliable spreadsheet.
- Track cost-savings.
- Let staff know how they've done...
- Reward staff for their efforts- create incentives such as movie tickets, catered lunches, pizza parties
- Apply for an award from Practice Greenhealth
- Use results as a Performance Improvement Initiative for The Joint Commission.

Don't Forget...
Have Fun!



University of Texas Medical Branch

New Employee Training

University of Texas Medical Branch



Change... requires shift in mindset and enlightened leadership

Continuum Health Partners



Announcing the first annual Continuum Environmental Quality Award Winner: The Engineering Department !

Who will win next year?
Contact the QI Department to find out how to enter: 212-844-8420



Review & Program Maintenance

- Team Development
- Data Collection
- Data Review and Goal Setting (short, medium, long)
- Policy/material Development
- Monitoring
- Waste data tracking
- Ongoing Education, New Employee Orientation
- Report, reassess and repeat



Leading Communities to a Healthier Future

HealthierHospitals.org



Engaged
Leadership



Less
Waste



Healthier
Food



Safer
Chemicals



Leaner
Energy

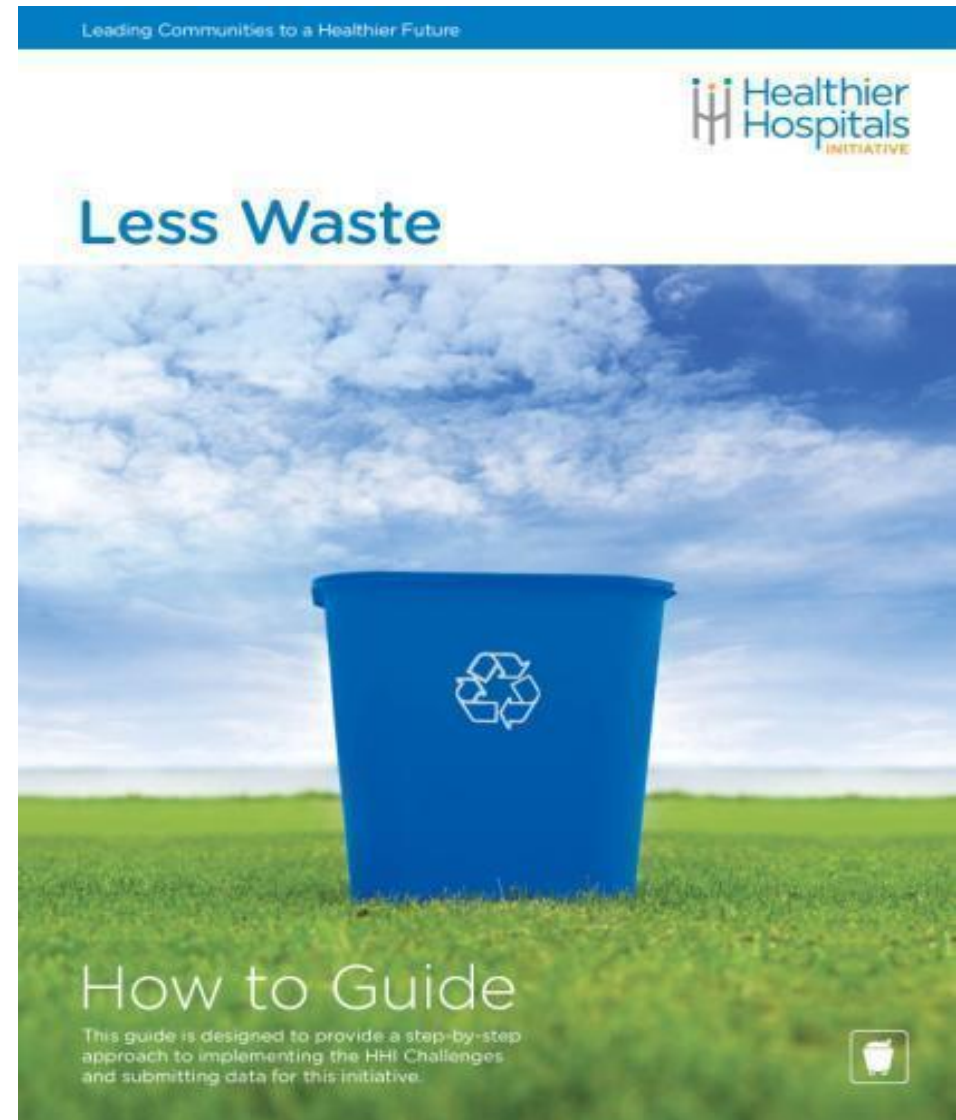


Smarter
Purchasing



Less Waste

While some health care environmental impacts are hard to see, understand, or quantify, waste is different. The less waste challenge offers win-win strategies that will both improve environmental performance and offer cost saving strategies.



Less Waste

Regulated Medical Waste Reduction Reduce regulated medical waste to less than 10 percent of total waste or less than three pounds per adjusted patient day	Recycling Achieve a 15 percent recycling rate	Construction and Demolition Diversion Achieve an 80 percent recycle and diversion rate for major renovations and new construction
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Level 1 – Commit to one

Level 2 – Commit to two

Level 3 – Commit to all three

Thank you

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