Developing a Process to Reduce OR Waste

Beth Israel Deaconess Medical Center | Harvard Medical School Teaching Hospital | The Silverman Institute For Health Care Quality and Safety

Beth Israel Deaconess Medical Center

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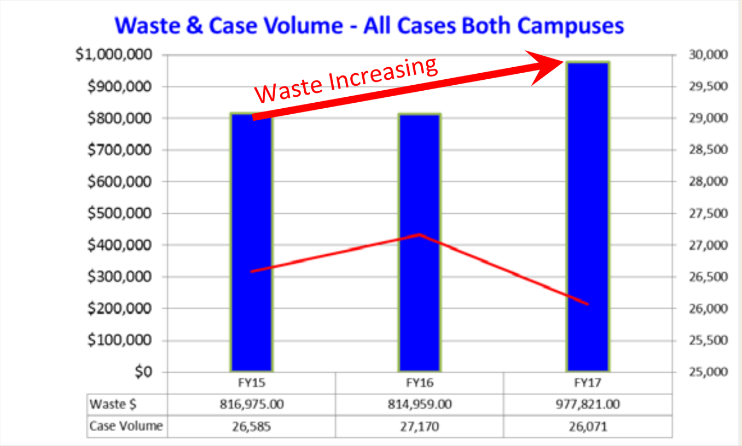
Problem Statement

At Beth Israel Deaconess Medical Center (BIDMC) the OR Supply Steering Committee has been tracking waste for several years. Waste is defined as items brought into the OR, opened/implanted but not used and cannot be used for other patients or future cases. As an example, items my be opened onto the field and not needed or, a surgeon may request an incorrect item. Over the past three years items wasted in the OR have increased. We acknowledge that some waste is not preventable; for example, the case that cancels after set-up due to an unexpected change in the patient's status. Two of the pillars of our Operating Plan are *"Financial Health"* and *"Committed Workforce".*

Identifying and creating a culture of awareness abound decreasing OR waste is a viable way of engaging a multidisciplinary team, increasing awareness and achieving financial health.



Waste & Case Volume - All Cases Both Campuses
Waste Increasing
$1,000,000
$900,000
$800,000
$700,000
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$0
30,000
29,500
29,000
28,500
28,000
27,500
27,000
26,500
26,000
25,500
25,000
FY15
FY16
FY17
Waste $
816,975.00
814,959.00
977,821.00
Case Volume
26,585
27,170
26,071

Goals

1. Reduce OR supplies wastage by 10% ($98,000)
2. Create cultural awareness of the impact of OR waste

Team

Title	Department
Clinical Advisors (2): • **General, Trauma, Transplant, Plastics** • **Neurosurgery, Ortho Trauma, Ortho Spine, Maxillo Facial, and ENT**	**PCS – Periop.**
Clinical Nurses: West OR (5), CVI (2)	**PCS – Periop.**
Associate Chief Nurse, Perioperative Services	**PCS – Periop.**
Director of Business Operations, PCS	**PCS – Periop.**
Nursing Director: West OR, CVI OR	**PCS – Periop.**
Surgeons • **Division Chief, Podiatry** • **Orthopaedic-Spine**	**Surgery and Orthopaedics**
Unit Based Educator, West OR	**PCS – Periop.**
Sr. Financial Analyst	**PCS – Periop.**
Sr. Management Engineer	**PCS – Periop.**
Surgical Technologist	**PCS**

Analysis & Interventions

Waste Reduction Process Steps

1 – Create a Charter - Set a Goal
- Educate team to a clear vision Validate the hypothesis
- Define Waste
- Reach team consensus on charter & goal
- Invest the time to collect real data

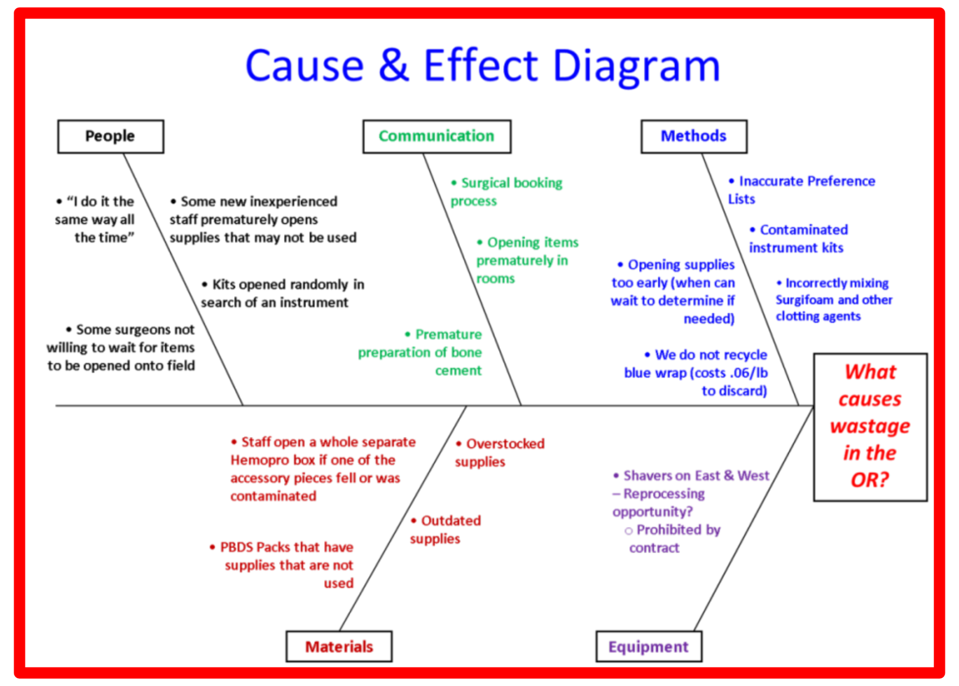
2 – Analyze Causes of Waste
- Conducted complete review of **Procedure Packs**

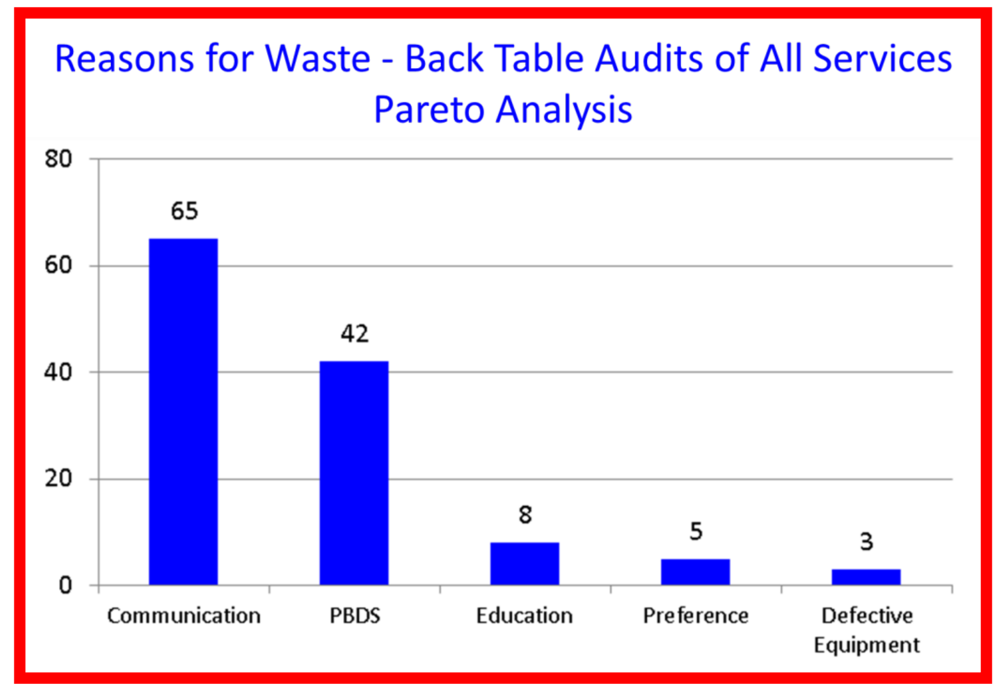
  Eliminated unneeded items resulting in **annual savings of $68,024**
- **Reviewed overstocking and outdated supplies**

3 – Implement Corrective Actions
- Reviewed/identified opportunities to reduce waste in **booking the surgical procedure**
- **Preference lists** review and update

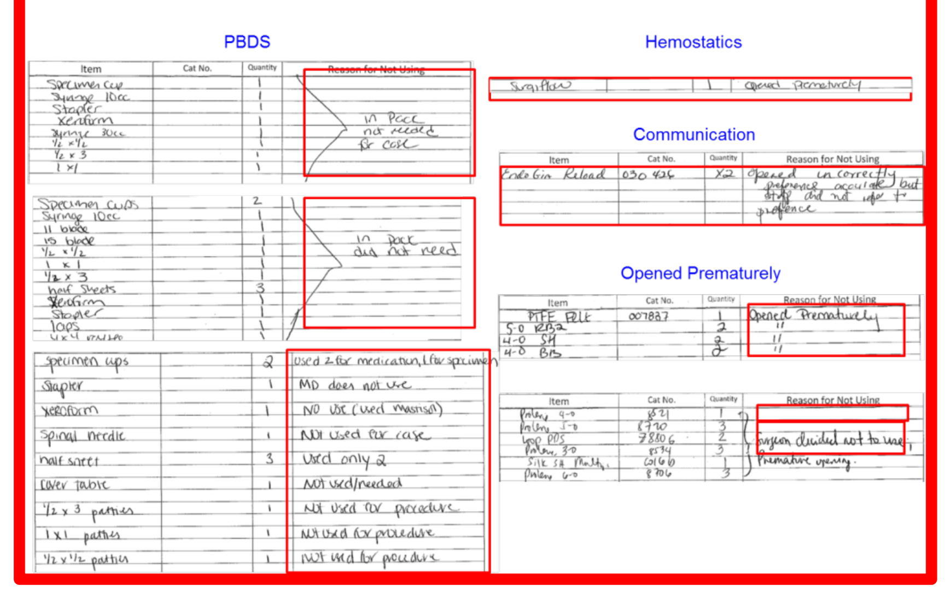
4 – Assemble Tool Kit
- Create presentation of problem, analysis and corrective actions and deliver to staff

5 – Engage Surgeons
- Create service-line specific presentations and deliver to surgeons in all service lines





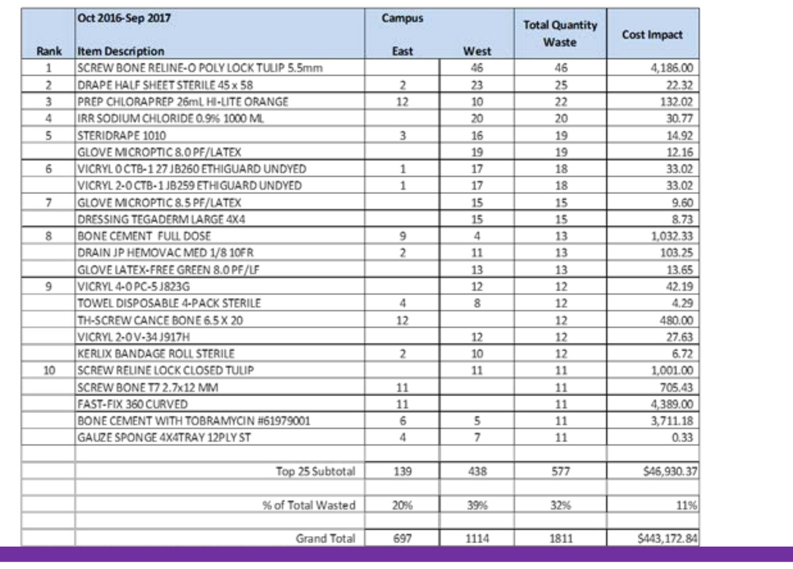
Back Table Audits



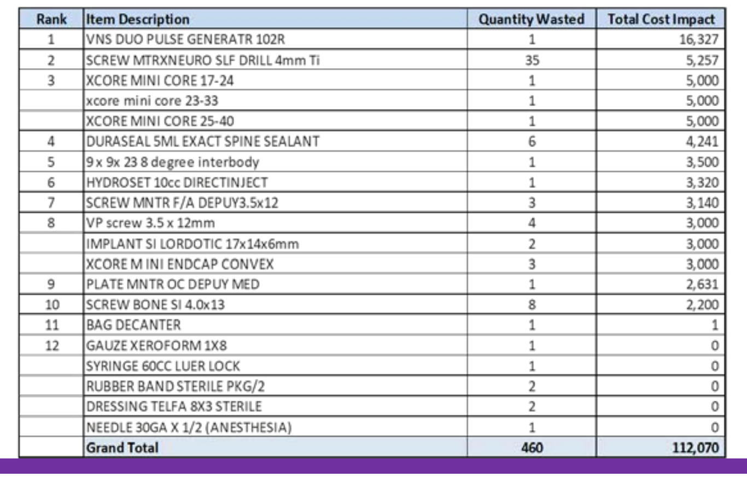
Top 25 Reasons for Waste

	Campus	West	
	Manipuled Reason	**Sum of Total Cost**	**Percent to Total**
1	SURGEON - Improper fit / item explanted	$ 332,657	47%
2	SURGEON - Incorrect item requested / changed mind	102,499	15%
3	SYSTEM - Item contaminated	70,440	11%
4	SYSTEM - Case cancelled after item was opened	61,358	7%
5	PATIENT - Condition changed	16,570	3%
6	SURGEON - Improper size/length/fit / item explanted	15,528	2%
7	NURSING - Item opened prematurely	15,238	2%
8	ITEM - Broke/Dropped During Procedure	10,782	2%
9	SURGEON - Used for temporary fixation / not implanted	9,081	2%
10	PRODUCT - Packaging or item damaged	8,638	2%
11	OTHER - Opened Not Used	7,508	1%
12	NURSING - WRONG ITEM OPENED	5,298	1%
13	Other - Temporary Fixation	4,198	1%
14	SURGEON - USED FOR TEMPORARY FIXATION/NOT IMPLANTED	3,994	0%
15	NURSING - Item assembled incorrectly	2,003	0%
16	SURGEON - Case scheduled incorrectly	1,029	0%
17	SYSTEM - Case Changed Since Booking	763	0%
18	SURGEON - Changed Mind	715	0%
19	OTHER - No Reason Provided	604	0%
20	OTHER - Case converted to open	490	0%
21	SURGEON - Tested Product	478	0%
22	SYSTEM - Incorrect item on preference	349	0%
23	OTHER - Difficult Patient Anatomy	183	0%
24	Other - Staple Misfired, opened second	152	0%
25	System - Item Contaminated During Surgery	122	0%

Top 10 Items Wasted During Orthopaedic Procedures

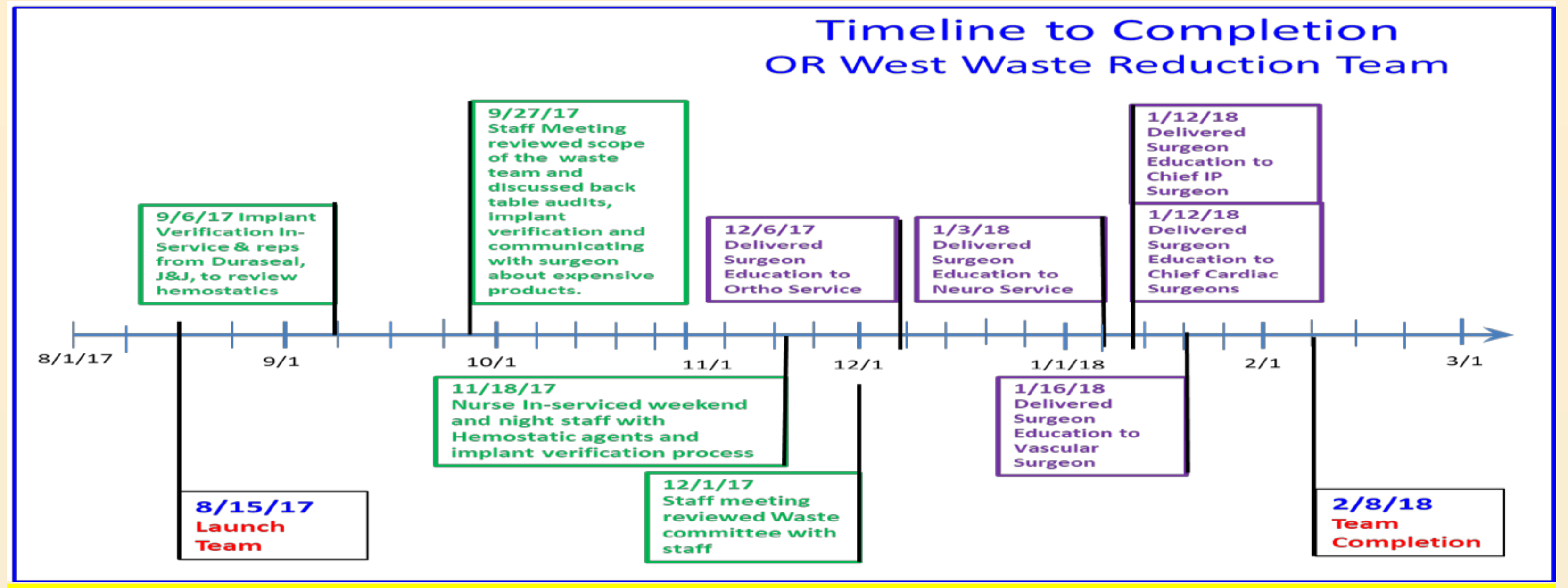


Top 12 Items Wasted During Neuro Procedures



Creating a Shared Mental Model

Engagement of Staff Through Education



Timeline to Completion
OR West Waste Reduction Team
8/1/17
9/1
10/1
11/1
12/1
1/1/18
2/1
3/1
8/15/17 Launch Team
9/6/17 Implant Verification In-Service & reps from Duraseal, J&J, to review hemostatics
9/27/17 Staff Meeting reviewed scope of the waste team and discussed back table audits, implant verification and communicating with surgeon about expensive products.
11/18/17 Nurse In-serviced weekend and night staff with Hemostatic agents and implant verification process
12/1/17 Staff meeting reviewed Waste committee with staff
12/6/17 Delivered Surgeon Education to Ortho Service
1/3/18 Delivered Surgeon Education to Neuro Service
1/12/18 Delivered Surgeon Education to Chief IP Surgeon
1/12/18 Delivered Surgeon Education to Chief Cardiac Surgeons
1/16/18 Delivered Surgeon Education to Vascular Surgeon
2/8/18 Team Completion

OR Staff Education

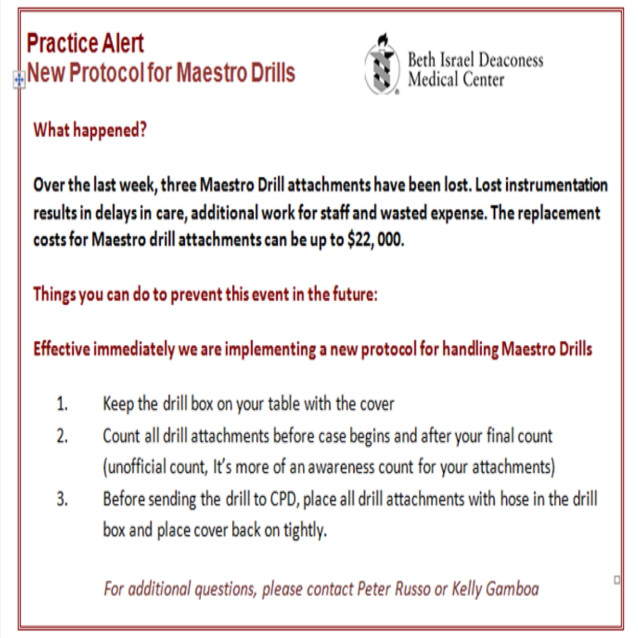
OR staff education included:

Created Teach Back tool

Implant verification process
- Handling of similar implants
- Disposal of surgical sponges in regular trash ($0.06/lb.) vs. red bag trash ($0.22/lb.)

- Correctly charging for items
- Ensure that "have-availables" are in the room

Hemostatics

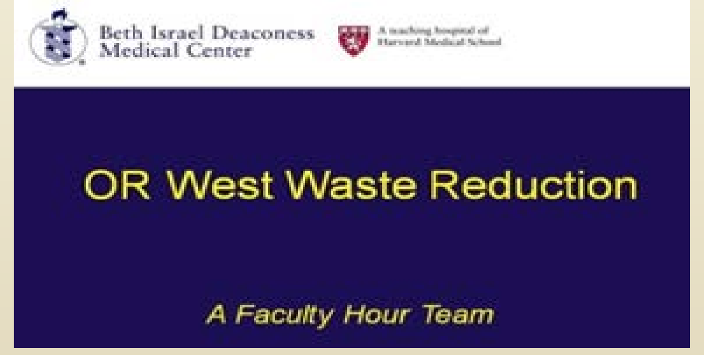


Practice Alert
New Protocol for Maestro Drills
Beth Israel Deaconess Medical Center
What happened?
Over the last week, three Maestro Drill attachments have been lost. Lost instrumentation results in delays in care, additional work for staff and wasted expense. The replacement costs for Maestro drill attachments can be up to $22, 000.
Things you can do to prevent this event in the future:
Effective immediately we are implementing a new protocol for handling Maestro Drills
1. Keep the drill box on your table with the cover
2. Count all drill attachments before case begins and after your final count (unofficial count, It's more of an awareness count for your attachments)
3. Before sending the drill to CPD, place all drill attachments with hose in the drill box and place cover back on tightly.
For additional questions, please contact Peter Russo or Kelly Gamboa

Physician Education

Team Meetings by specialty:

Enhanced review of supplies, instrumentation, medications (i.e. hemostatics),implants, before start of case during time-out
- Continuous review preference lists
- Adopt an "open only what is needed" culture
- Improve Communication:
  - Follow Implant Verification Process
  - Early confirmation of needs
  - Scheduled vs. actual procedure



Results

1. Achieved 69% of targeted financial goal in first 3 months through review and revision of procedural packs
2. Created tool kit to continue the work
3. Actively engaged staff and surgeons to think differently moving to a new culture

Next Steps

- Sustain the gains
- Seek and identify new opportunities and spread to East Campus