Barriers to Engaging Physicians in Sustainability

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Disclosures

• Scientific Advisory Board Member:
  – Masimo Corporation
  – Teleflex Medical

• Member, ASA Task Force on Environmental Sustainability

• ASA Liaison to Practice Greenhealth
Lecture Objectives

• Discuss barriers and obstacles to physician engagement in sustainability initiatives
• Show some examples of OR initiatives that have worked
• Provide tools, evidence and pearls for success to help you succeed at your institution!
Barriers/Obstacles to Physician Engagement

• Lack of education and knowledge
• Physicians are already too busy....
• Where is the data? Show me the evidence..
• Clinical priorities
• Educational Priorities
• Fear of legal liability
Barriers/Obstacles to Physician Engagement

• Lack of education and knowledge
• Physicians receive no formal education on climate change or sustainability
• NOT part of the medical school curriculum
• Lack of awareness of medication costs
• Lack of awareness of environmental impact
Physician Cost Awareness

• Anesthesiologists not cost savvy…..

• Wax et al. 2008
  – Surveyed anesthesiologists re costs
  – Most over- or underestimated costs despite having the information available on their departmental website

• Hadjipovlou & Bailey 2010
  – similar survey of anesthesia providers
  – Underestimated costs of expensive drugs, overestimated costs of in-expensive drugs
Australian Recycling Survey

- Web based survey with 11 questions sent to Anesthesiologists in Australia, New Zealand and England to assess attitudes towards recycling
- 93% responded they would like to participate in recycling in the OR
- Only 11% responded that recycling occurs where they practice
- Greatest perceived barriers:
  - Inadequate recycling facilities (49%)
  - Negative staff attitude (17%)
  - Inadequate information on how to recycle (16%)

Lack of Knowledge about OR Waste as well...

- Survey performed prior to a waste reduction initiative at Johns Hopkins
- Residents and faculty tested on their knowledge of what should be placed in a red medical waste bag...
- They performed VERY poorly!
- This was not a surprise, based on our surveillance:
Lack of Knowledge about OR Waste as well...

- Anesthesia providers asked 7 questions related to what should go into a red waste bin
- Only 16% of respondents got all correct
- The majority of respondents got 50% of the questions wrong!
Barriers/Obstacles to Physician Engagement

• Physicians are already too busy....
  – Focused on patient care
  – Pressure to increase efficiency
  – Focused on educating residents
  – Sustainability not a priority....
Barriers/Obstacles to Physician Engagement

• Where is the data? Show me the evidence..
• Clinical priorities
• Educational Priorities
• Fear of legal liability
Show Me the Data....
Show People the Results!

• Tracking data important!
  – Lots of data to analyze
  – Need to convert data into forms people will understand and respond to
  – Data needs to be measured and accessible to have an impact
The Leader in Sustainability Management Software

1. Automatically imports most data (no more spreadsheets!)
   – Credible data directly from the utility/vendor

2. Benchmarking, dashboards, scorecards, and reporting
   – Benchmark your facility nationally and within your system
   – Consistent system-wide reporting

3. All sustainability metrics (energy, waste, water, and food) tracked in one place

4. Supports multiple users in easy to use web based format

5. Designed specifically for hospitals
ECOFLOW

• New display option offered by GE on their Aesys and Avance Platforms

• Shows graphical representation of oxygen flow and anesthetic cost in real time

• Marker shows flow at which FIO2 is 25 to prevent hypoxic delivery
Why Should Physicians Care?

• Sustainability Initiatives :
  – Save hospitals money
  – Protect the environment
  – Improve patient health and healing
  – Improve staff health and well being

  – Remember as physicians, we vowed to
  – “First, do no harm”
Green Efforts for the Anesthesia Provider

• Join the recycling and reprocessing efforts in the OR...or start them!
• Collect unused supplies for medical missions
• Improve efficiency and reduce waste
  – Draw up only medications and supplies to be used
  – Use low flow anesthesia
  – Use safer anesthetics when possible
    – TIVA
    – Regional anesthesia
Other Things you can do...

• Donate to medical missions:
  – REMEDY www.remedyinc.org
  – MedShare International www.medshare.org
  – Operation Giving Back
    www.operationgivingback.facs.org

• What can be donated:
  – Unused surgical supplies (sponges, gowns, gloves)
  – Used medical equipment
Get Involved!

• Find out what is being done at your hospital
  – Other departments may already have initiatives you can join
  – Or-start one in the OR!

• ASA Environmental Task Force
  – Focused on greening initiatives
  – Website with resources for ASA members:
    – Greening the OR manual
Get Involved!

• Practice Greenhealth
  – Lots of online resources:
  – Practicegreenhealth.org
  – Greening the OR checklist
  – Webinars for members
  – CleanMed meeting
• 2014 meeting:
  • June 2-5
  • Cleveland, Ohio
Challenges to Address:

• Compliance!
  – The OR is a busy place—takes time to recycle
  – Make it easy to do

• Work within space constraints

• Find space for new bins—tricolor bins

• Avoid education drift
  – Education needed for new providers
  – Reminders needed for all providers
  – Signage in the OR very helpful
• Anesthesia/Operating Room Initiatives
The Low Flow Anesthesia Project

Project Goals:
• To reduce total inhalational anesthesia gas usage
• To increase compliance with appropriate use/low flow
• To reduce overall inhalational gas costs
• To reduce overall anesthesia gas waste
The Low Flow Anesthesia Project

• Stage 1: data collection from the electronic medical record about inhalational gas selection and flow rates
• Stage 2: Education about low flow and appropriate usage
• Stage 3: removal of Sevoflurane vaporizers from low use areas (available upon request)
• Stage 4: Data collection post-intervention
Ideal Utilization (Low Flows) greatly Improved for Desflurane

Desflurane Ideal Utilization (0.5-1.5 L/min)
And For Sevoflurane-Low Flow and Short Case Duration

Sevoflurane Utilization all OR's

Month

Baseline
May-11
Jun-12
Dec-12

≤ 2 hours
≥ 2 hours

Percentage

0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Our Results

Gases Monthly Spend

- DESFLURANE
- ISOFLURANE
- SEVOFLURANE
- Grand Total
And Our Cost Savings…

Gas Expense per FY

Fiscal Year

Dollars

- $694,181
- $632,461
- $551,186
- $467,908
- $477,000

2009 2010 2011 2012 Annualized
Total misuse: how the next project started:
Purpose and Goals

• To develop a culture of:
  ➢ Sustainability in the peri-operative environment
  ➢ Waste reduction to promote cost savings
  ➢ Environmental stewardship in the peri-operative environment

• 5 components:
  ➢ Red Bag Trash Reduction
  ➢ Recycling
  ➢ Reprocessing
  ➢ Supply waste reduction
  ➢ Linen waste reduction
Pre-Interventions

• 50% of the trash at Johns Hopkins was red bag waste—more than 4 TIMES the national average

• In FY11, we documented $242,548 in wasted supplies from the operating room

• No recycling existed inside the operating room
First Step: Education

Regulated Medical Waste

- Liquid or Semi-Liquid body fluids
- Soaked material that releases blood when compressed
- Plastic bags with the biohazard symbol
Keep RECYCLING simple

YES

• Paper
• Plastic
• Cardboard
• Anesthesia circuits/masks
• Nasal cannulas
• Green O2 masks
• LMAs and ETTs
• Oral airways
• Empty glass vials

NO

• Gloves
• Gowns: yellow or blue
• Caps, masks, shoe covers
• Blue table drapes
• Blue OR bed covers
• Gauze/lap pads
• Chux

• anything saturated with blood
Know Where to Throw

**Green**

- Drippable • Pourable • Flakeable

- *if any of the Green or Clear bag items

**Clear**

**Red**

Questions regarding additional items?
Email a picture to sustainable@hml.edu
Or submit a suggestion in below envelopes with cards provided.
Second Step: Implementation

- Signage in ORs
- Phase 1: red bag use reduction
- Phase 2: recycling bins in the OR
- Added linen bins in the OR to reduce linen waste
- Added reprocessing bins in OR and PACU (for pulse oximeters)
Resident Recycling Survey

- 56 participants (75 residents in program)
- 86% recycle at home
- 95% aware of the OR recycling initiative
- Do you actively participate? 95% said yes
- Do you feel it makes a positive impact?
  - 50% “agreed strongly”, 50% “somewhat agree”
- Do you feel the recycling initiative is?:
  - Simple: 44.6%  confusing: 51.8%
  - A waste of time: 3.5%
Resident Recycling Survey

• Perceived Barriers:
  – Bins not easily accessible to the anesthesia team
  – Available bins in operating rooms not consistent
  – Affects efficiency in the OR
  – Takes additional time and effort during an already busy day
Results!

• Reduction in number of red bag trash cans in the OR
• More recycling in the OR (previously there was none!)
• Increased use of reprocessed items
  – Pulse oximeters
  – Surgical supplies
  – Pneumatic sequential devices
Johns Hopkins Hospital: 2012 Sustainability Success Report

• Reusable sharps container program diverted 150,422 pounds of plastic from the waste stream annually

• Reduced Regulated Medical Waste from 33.62% in January 2010 to 10.63% of total waste in January 2013

• Saved $1.1 million from reprocessing surgical supplies in 2012
July - September 2012

466,634 (11%)
1,356,246 (33%)
2,344,340 (56%)

October - December 2012

546,227 (14%)
557,847 (15%)
2,711,940 (71%)

Recycling Percentage

[Graph showing recycling percentage from Jan 12 to Feb 13]
Pearls For Success

• Begin with increasing awareness of the problem
• Education is Key!
  – Show providers DATA
  – LOTS of signage and reminders
• Start Slow—one implementation at a time
Pearls For Success

• Find Champions “in the trenches” – Nursing, support staff, residents, faculty
• You also need a Champion at the leadership level
• Culture Change is slow – be patient!
• Don’t lose momentum
Don’t just sit in a
OR STOOL....
Get Involved!
WE DON’T INHERIT THE EARTH FROM OUR ANCESTORS, WE BORROW IT FROM OUR CHILDREN.

— DAVID BROWER