THE RED BOX: A SIMPLE SOLUTION MAKES FOR A GREAT INNOVATION

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The Team

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Back: Kathryn Marhoefer, Marvis Hafner, Angel Mueller and Andrew Behan
Topics of Interest

• Isolation Precautions
• Personal Protective Equipment
• Isolation Compliance
• The Red Box Intervention
• Benefits
• Reaction
• Questions/Comments
Isolation Precautions

- On the rise
- Illinois Mandatory MRSA Screening Law
Background

• Prior to 2009, staff followed guideline-recommended protocol for patients on Contact Precautions:
  • Healthcare professionals (HCP) don personal protective equipment (PPE) prior to entering the room
  • HCP remove PPE prior to exiting the room
Personal Protective Equipment

- Gown
- Gloves
- Mask
- Goggles
Isolation Compliance

• Many barriers
  • “I didn’t touch anything”
  • “It falls off, anyway”
  • “The gowns are too hot”
  • “I forgot”
  • “I don’t have time”
  • “Why do I have to put all this stuff on just to ask the patient if they need anything?”
Give ‘em an inch…

- They will take a mile!
  - Observed HCP in patient rooms without PPE
  - Most standing just inside the doorway
Challenge

- How can we avoid unnecessary use of PPE at the door’s entrance for patients on Contact Precautions?
  - Costly
  - Creates communication barrier
  - Declining compliance
Problem Solving At Its Finest

- Typically, current guidelines suggest to wear PPE when entering the patient’s room, in contact with the patient or their environment.

- In 2009, a team of clinicians and IPs met. Research indicated that:
  - no documented risk exists for HCP to communicate at door’s entrance:
    - Not in contact with the patient
    - Nor their contaminated environment
Main Objectives

• Reduce waste
  • HCP time
  • Unnecessary PPE
• Increase patient face time
• Yet, not increase the risk of transmitting infection
Research of Adverse Outcomes

• Patients in isolation precautions
  • Less contact with caregivers
  • More adverse events

"...We found 16 studies that reported data regarding the impact of isolation on patient mental well-being, patient satisfaction, patient safety or time spent by healthcare workers in direct patient care. The majority showed a negative impact on patient mental well-being and behaviour, including higher scores for depression, anxiety and anger among isolated patients..."

The Solution?

• Time frame: January 2009-December 2010

• A 3 ft. Red Box was created using red, vinyl duct tape extending from threshold of the door

• Outside the Red Box, PPE was worn per policy
Duct Tape, Really?

- Red, vinyl duct tape
- Low adhesion
- 2” by 90 yds
- Approx. $7 per roll
Observational Study

- Study Design: measured whether a Red Box safe zone in Contact Precaution rooms could significantly improve:
  - HCP satisfaction and compliance with policy
  - Communication between the HCP and patient
  - Savings of time and money (in unused gowns/gloves)
  - Reduction of waste as a Green Initiative
Did It Work?

• Needed to measure savings in time and money, and HCP satisfaction
  • Study broken into three main parts:
    1) Time Study
    2) Cost Savings/PPE Usage/Reduction of Waste
    3) HCP Satisfaction
Part 1: Frequency of Red Box Usage

A time study revealed that approximately 30% of HCP interactions were performed within the Red Box to communicate with and assess patient needs.
Part 2: Cost and Time Savings

- Approximately $110,000 per year was saved based on:
  - The cost of unused PPE during the 30% of interactions while utilizing the Red Box.

- A time savings of over 2700 hours per year, facility-wide, was realized based on:
  - The determination that it took HCP approximately 70 seconds to don and remove PPE.
  - TMC has an average of 25 patients per day in Contact Precautions.
## Cost and Time Savings

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<thead>
<tr>
<th></th>
<th>Average/ Patient/Day</th>
<th>Average/ Patient/Year</th>
<th>Total/ Facility*</th>
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</thead>
<tbody>
<tr>
<td><strong>PPE Cost Savings</strong></td>
<td>$9.88 ($0.76 per PPE use)</td>
<td>$3606.20</td>
<td>$90,155**</td>
</tr>
<tr>
<td><strong>HCP Time Savings</strong></td>
<td>1/3 hour</td>
<td>110 hours</td>
<td>2742 hours</td>
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*Based on 25 isolation patients/day

**Up to $110,000 including all 3 campuses
Part 3: Staff Survey

- Survey was distributed to nursing staff to determine their satisfaction in using the Red Box.

- Results of 154 surveys revealed use of the Red Box:
  - Lessened barriers when communicating (67.5%)
  - Saved time not having to don PPE (79.2%)
  - More frequent assessment and communication with patients (79.2%)
HCP Red Box Satisfaction Survey

- Check on Patient More Frequently
- Less of a Barrier to Care for Patient in Isolation
- Assess and Communicate with Patient more Frequently
- Saves Time not Having to Don PPE

Percent Responded "Yes"

n = 154
Did It Work?

Isolation Compliance March 2009 - February 2012

Red Box Implemented
How to Successfully Implement

• Solicit support of nursing/clinical leadership
• Obtain materials
  • Duct tape
  • Educational protocol
  • Logistical plan for placement/removal
• Try small test of change
  • One room
  • One unit
• Implement Educational Initiative
  • Staff competency (huddle, clipboard quiz)
• Measure Outcomes
  • Time study
  • Cost savings
  • HCP satisfaction
  • Patient Satisfaction
• Evaluate and Plan Facility-wide Implementation
Helpful Tips

• Permanent or temporary use of visual cue?
  • Placed on admission; removed upon completion of discharge cleaning
    • Acts as a visual cue for HCP when entering the room
    • Acts as visual cue for EVS when cleaning room
    • Housekeeping removes as last part of cleaning signifying room has been properly cleaned
  • Caution: Permanent tile or tape placement could lead to “visual cue fatigue”
    • Leads to reduction in staff compliance over time
Helpful Tips

• Is this a HIPAA violation?
  • NO
  • The Red Box only denotes precautions, it does not discriminate or identify patient diagnosis/identity
Issues For Further Research

Many opportunities are available for additional research:

• Patient perception when communicating with HCP in the Red Box
• Visitors’ use of the Red Box
• Reducing potential negative outcomes for patients
• Value for use in Droplet Precautions
Sharing the story

- Oral abstract submitted at APIC ‘11 International Conference in Baltimore, MD
  - Blue Ribbon Award
  - Abstract Published in June issue of AJIC

- Blogs, emails, TV interviews, calls
  - Over 500 stories written in the media
  - USA Today, TIME Magazine, Forbes, WSJ
Media Response

“a simple and inexpensive solution to the complex problem of improving compliance”

“improves communication while minimizing cost”
What are some saying about the strategy?

• “Takes the guess work out of anticipated contact”
• “Increases our face time with patients”
• “Acts as less of a barrier when communicating”
• “Can more quickly assess our patients”
• “Saves time and money in unused PPE” (personal protective equipment)
Department of Health and Human Services (HHS)

• Find the Red Box Strategy on Innovations Exchange page of AHRQ’s Website:
  • http://www.innovations.ahrq.gov/content.aspx?id=3337&tab=1
## Quick Review: Side Effects of Red Box

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<tr>
<th>Red Box Usage May Cause Increase in:</th>
<th>Red Box Usage May Cause Decrease in:</th>
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<tbody>
<tr>
<td>Interaction with Isolation patients</td>
<td>PPE Costs</td>
</tr>
<tr>
<td>Isolation Compliance</td>
<td>Time Wasted from unnecessary PPE usage</td>
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<tr>
<td>HCP satisfaction</td>
<td>Isolation patients feeling “isolated”</td>
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<td>Care of patients in Isolation Precautions</td>
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Need more information?

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