



STRATEGIES FOR PREVENTING HAIs THROUGH SHARED MEDICAL DEVICES

Patricia Gutierrez, RN, BSN

Miriam-Nirvana Nagoulat, RN, BSN

BACKGROUND

- ❖ Hospital acquired infections (HAIs) have been a burden on patients' health and healthcare costs (↑ mortality, morbidity)
- ❖ Nurses and support staff are the frontline defense in applying daily infection control practices to prevent infection and the transmission of organisms
 - ❖ MRSA, VRE, C. Diff, some of which can survive for prolonged periods of time on dry surfaces
- ❖ Improper use of medical devices/equipment = spread of bacteria between patients = HAIs

WHAT WE FOUND



- Oxygen adapters or “Christmas trees” are common in acute care areas
 - These adapters are single-use products, per the manufacturer
 - Not explicitly labeled as “single-use”
- FDA states that a single use device is “a disposable device, intended for use on one patient. It is not intended to be cleaned, disinfected, sterilized, and used on another patient.”[§]

ASSESSMENT IN AN ACUTE CARE SETTING

- A project conducted on an acute care unit demonstrated the effectiveness of educating nursing and support staff on the proper use of oxygen adapters.
- Although oxygen tubing with universal connectors are available, they are not yet compatible with all oxygen devices



IMPLEMENTATION

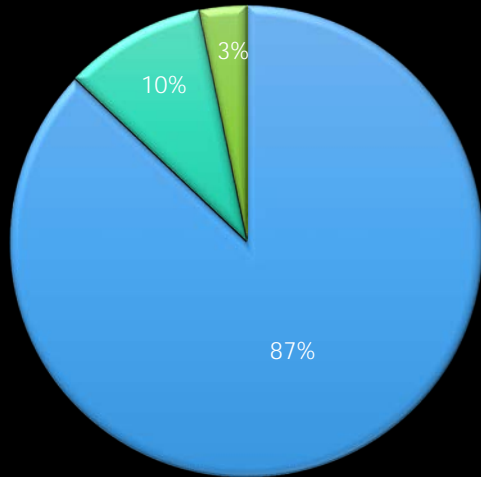
- ❖ A survey was collected before and after education was provided via:
 - ❖ Staff huddles at start of shift
 - ❖ SBAR in common areas
 - ❖ Email
 - ❖ Editing discharge checklist

EVALUATION

- ❖ The pre-education survey of more than 30 participants, including registered nurses, patient care assistants, and other staff, showed that 65% were not using oxygen adapters per manufacturer guidelines.
- ❖ An increase of over 150% compliance with manufacturer guidelines was observed in the post-education phase of the project.

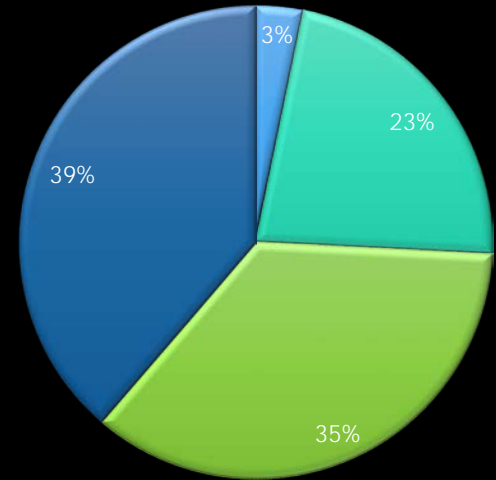
PRE-EDUCATION RESULTS

Responses Received



■ RN ■ PCA ■ Other

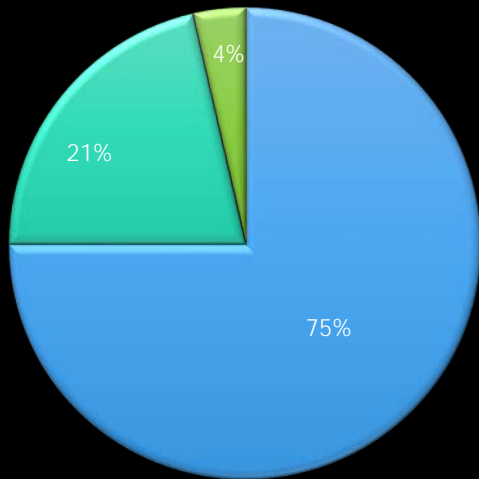
When are staff switching adapters?



■ Every Shift ■ When Soiled ■ After Each Patient ■ Never

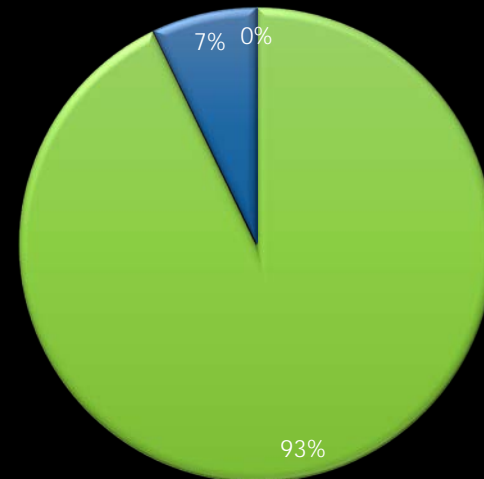
POST-EDUCATION RESULTS

Responses Received



■ RN ■ PCA ■ Other

When are staff switching adapters?



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MOVING FORWARD

- ❖ To support patient safety and reduce HAIs, implementing similar education to other hospital units can significantly improve hospital infection rates and reduce hospital costs.
- ❖ Educating staff members is key:
 - ❖ Improper use of medical devices/equipment = spread of bacteria between patients = HAIs

REFERENCES

- § US Dept of Health and Human Services, Food and Drug Administration, & Center for Devices and Radiological Health. (2015) *Labeling Recommendations for Single-Use Devices Reprocessed by Third Parties and Hospitals; Final Guidance for Industry and FDA*. Retrieved from <https://www.fda.gov/RegulatoryInformation/Guidances/ucm071058.htm>
- ❖ Medline Industries, Inc. (2017) *XMAS Tree Adapter Nut & Nipple by Teleflex*. Retrieved from <https://owl.english.purdue.edu/owl/resource/560/10/>
- ❖ Centers for Disease Control and Prevention. (March 3, 2017). How do Infections Spread? [Abstract]. *How Infections Spread*. Retrieved from <https://www.cdc.gov/infectioncontrol/spread/index.html>
- ❖ Society for Healthcare Epidemiology of America. (2017) *Study Shows Nurses' Scrubs Become Contaminated with Bacteria in Hospitals*. [Press Release] Retrieved from <https://www.shea-online.org/index.php/journal-news/press-room/press-release-archives/541-study-shows-nurses-scrubs-become-contaminated-with-bacteria-in-hospitals>
- ❖ Arias, Kathleen. (2013) *Contamination and Cross Contamination On Hospital Surfaces and Medical Equipment*. Retrieved from https://www.barbicide.com/wp-content/uploads/sites/5/2013/05/nosocomial_pathogen_survival.pdf
- ❖ Medicines and Healthcare Products Regulatory Agency. (2013) *Single-Use Medical Devices; Implications and Complications of Reuse, V.2.1*. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/403442/Single-use_medical_devices_implications_and_consequences_of_reuse.pdf

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QUESTIONS?