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BACKGROUND

- In the simplest of terms pulse oximetry is a measurement of oxygen saturation of the blood.
- Pulse oximetry equipment uses light emission at specific wavelengths as it travels through tissue to measure the oxygen saturation level in blood.
- It is a noninvasive form of equipment and its use in critical care is common.
- Accuracy is dependent upon following manufacturer's instruction for use.
- Observations of improper application of pulse oximetry devices have been observed.

PICO

- **P:** Nurses working in the ICU using continuous pulse ox monitors
- **I:** Education via handout and verbal instruction during huddle
- **C:** Current practices
- **O:** Increased knowledge among nurses about safe pulse oximetry practices and proper use of each device

EVIDENCE

- According to Hlavin (2022), when education is used, there is a 99% chance that it will be used correctly, but without education, pulse ox's will only be used correctly 85% of the time.
- Klaus (2023) showed in their study that pulse oximetry is used to provide an accurate reflection of percentage of oxygenation of blood.
- Jubran (2015) was able to show that there is a lower rate of ICU transfers due to pulmonary complications when pulse oximetry is used correctly.

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OUTCOMES

- Increased in knowledge of the principles of pulse oximetry
- Improved compliance in proper application of pulse oximetry sensors
- Improvement in the ability to adequately monitor pulse oximetry

RESULTS

The results of the pre- and post- education surveys are limited due to small and varied sample sizes, and we had significantly lower participation in the post-education survey. The survey was also conducted anonymously online, so participants may not have fully understood the questions but would not have been able to ask a clarifying questions.

Information Tested	Pre-Education Survey	Post-Education Survey
Placement of finger pulse oximeter	68% answered incorrectly	20% answered incorrectly
Placement of Nasal Alar	32% answered incorrectly	10% answered incorrectly
Purpose of red light on pulse oximeter	12% answered incorrectly	0% answered incorrectly!
How to identify if the pulse oximeter is reading correctly/ good pleth wave	16% answered incorrectly	20% answered incorrectly
When to change pulse oximeter sensor	44% answered incorrectly	30% answered incorrectly

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IMPLEMENTATON

- A paper handout is provided to nurses to accompany verbal instruction about pulse ox equipment and proper uses.
- A pre and post survey will be completed by the nurses who completed the instruction.
- Limitations identified are: Poor survey response, majority of patients arrived from other units with improper equipment, infrequent huddling on unit.

NEXT STEPS

- Determine what drives deviation in practice.
- Investigate and evaluate the use of other devices available for use if necessary.
- Confer with other critical care units in the network.
- If necessary, create education for network-wide distribution.