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Increasing the Use of Waveform Capnography in Neonatal and Pediatric Patients

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Purpose

To improve outcomes for pediatric and neonatal patients with an advanced airway that require critical care transport. Utilization of waveform capnography for patients transported with an advanced airway can provide multiple benefits including confirmation of endotracheal tube placement, ventilation status and detection of ROSC during CPR.

Our aim statement was to increase our use of continuous waveform capnography from 82% to 91% in pediatric patients and 60% to 79.5% in neonatal patients by March 2018.

Methods

March 2017-March 2018: Joined the GAMUT National Quality Collaborative to increase the use of waveform capnography among 17 participating programs.

April 2017- The transport neonatal and pediatric medical director's agreed that we could improve patient outcomes with waveform capnography use for **all** our patients with advanced airways

June 2017- Expectations were announced and outlined in the department newsletter which staff are required to sign off on the information provided.

October-December 2017- Education at annual neo skills day

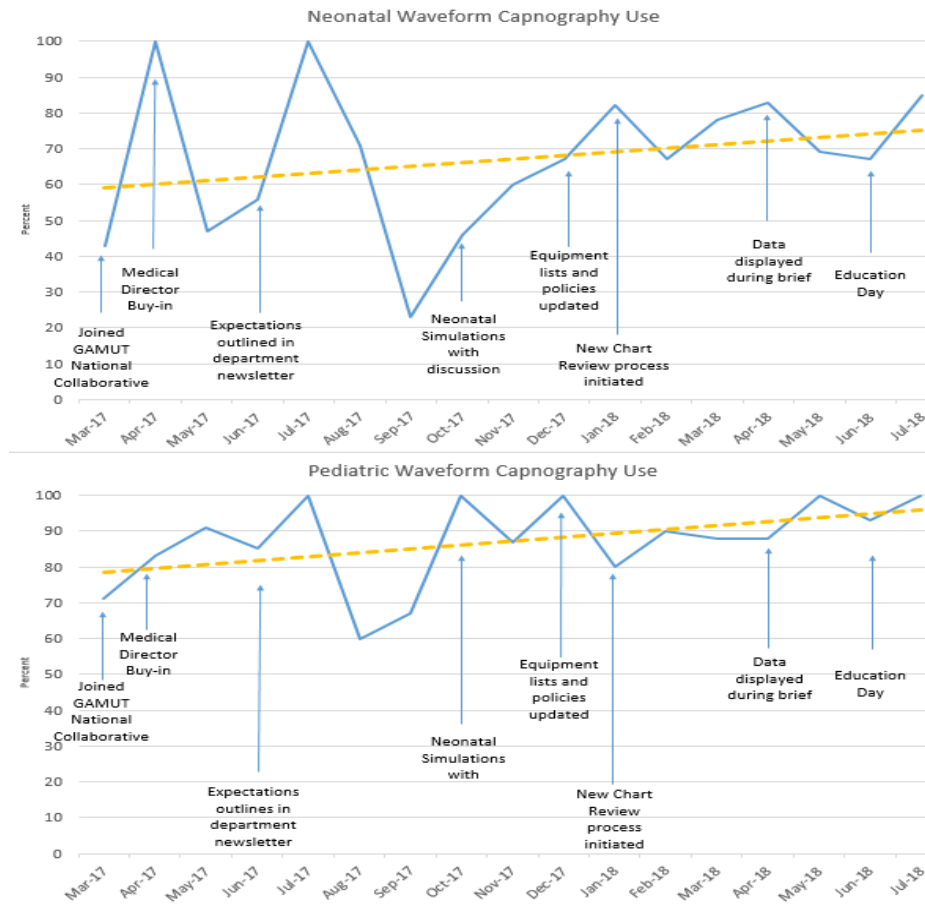
December 2017- Equipment lists and policies were updated

January 2018- A new chart review process is put into place

April 2018- Waveform capnography use is displayed in beginning of shift brief for a visual reminder of importance

June 2018: Annual neo education day discusses and educates on the utilization and documentation of waveform capnography

Results



Conclusion

Due to the interventions we took to increase utilization of waveform capnography for all patients transported with an advanced airway, we increased use on our pediatric patients by over 40% and our neonatal patients by almost 100%.

	March 2017	July 2018
Neonatal	43% Use	85% Use
Pediatric	71% Use	100% Use

Discussion

Waveform Capnography: a quantitative, graphical, and real time measurement of partial pressure of CO₂ in exhalation
We found that the biggest impact and sustainable change occurred with 1:1 chart reviews, simulation and small group education and discussion.

Barriers include use during high frequency ventilation, ELBW neonates, test of change can take time to implement, time constraints, resistance to change, and poor documentation

References

GAMUT QI Collaborative Quality Metrics
gamutqi.org
Capnography in Pediatrics - Bhavani Shankar Kodali, MD
<http://www.capnography.com/Ped/pedg.htm>

- **Poster Guidelines**

- As you begin to design your poster for the Quality Improvement Science Poster Session, please follow the guidelines noted below:
- Posters are a visual representation of your improvement story or research abstract, created by your team after your work is accepted. We will not be printing your poster. You are responsible for bringing your own poster and hanging it in the Poster Session space. Additional information regarding the process will follow.
- The run chart or SPCC of your main outcome measure(s) is the main feature of a data-driven QI story, abstract or poster.
- Please consider placing your well labeled and annotated run chart, front and center in the poster, so poster viewers can read it from 2-3 feet away.
- Simplicity and clarity are the keys to an effective poster.
- Avoid overwhelming viewers with too much information—the casual viewer should be able to identify the main messages after a quick look at the poster.
- Simple visuals (attractive charts, tables, and graphics) will greatly increase the effectiveness of any poster.
- Symbols, letters, and numbers should be large enough to be seen from a distance of four feet.
- Dimensions are not to exceed 44 inches wide by 36 inches high. Posters that do not meeting these guidelines will be placed on extra boards in the back of the room.
- Use a horizontal/landscape orientation.
- If you wish to integrate video into your poster presentation, there are now a variety of commercially available hangers for iPads and similar devices that can be mounted to your poster. Please bring your own hanger, mount it securely, and be sure your electronic device is fully charged. Do not leave any electronic devices unattended.
- Electricity will not be available at the poster boards.
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