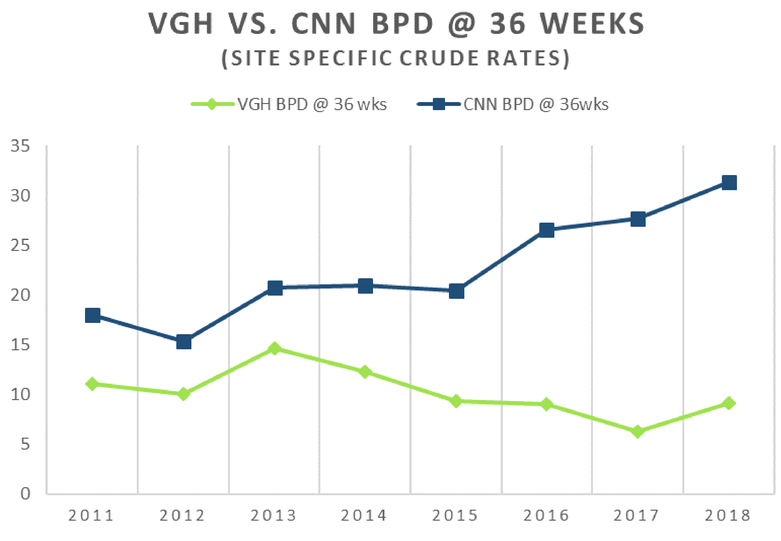
Use of Histogram and a Guideline for Oxygen Administration in the Neonatal Intensive Care Unit

Victoria General Hospital

Issue

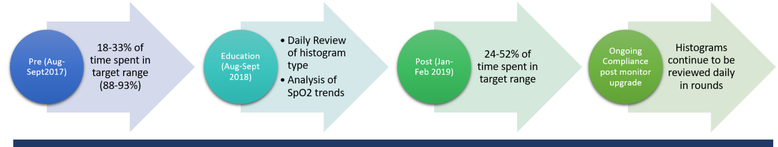
Oxygen is a drug with potentially dangerous side effects for the neonatal patient population. It is essential for clinicians to appreciate inappropriate control of administered oxygen may lead to irreversible damage for the premature infant.

Our aim is to achieve adequate oxygen tissue delivery without causing oxygen toxicity and oxidative stress in neonates.



Results

- The NICU team was able to increase the amount of time patients spent within the target oxygen saturation level.
- The team reported the histogram tools as an effective objective measure for communicating patient status and assessment across disciplines.

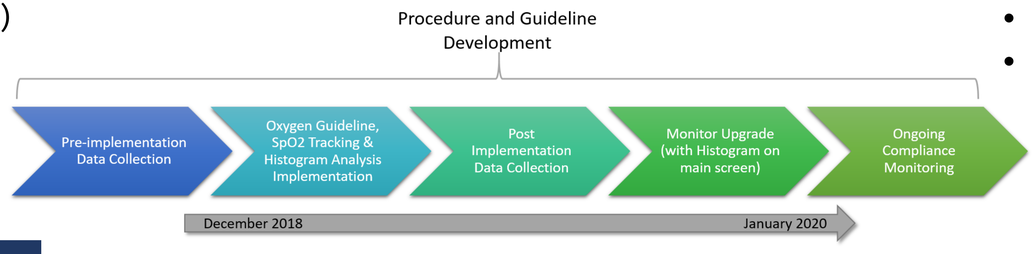


Context

- Victoria General Hospital's (VGH) Neonatal Intensive Care Unit (NICU) admits approximately 500 infants/year.
- The VGH NICU is a 22 bed tertiary care unit serviced by a multidisciplinary team.
- Bronchopulmonary Disease (BPD) rates for our unit remain higher according to the Canadian Neonatal Network (CNN) data.
- Our current performance in the appropriate management of oxygen (saturation targeting) is unknown.
- VGH site specific crude rate for infants born less than 33 weeks is 9.1 (CNN, 2018).

Change Plan

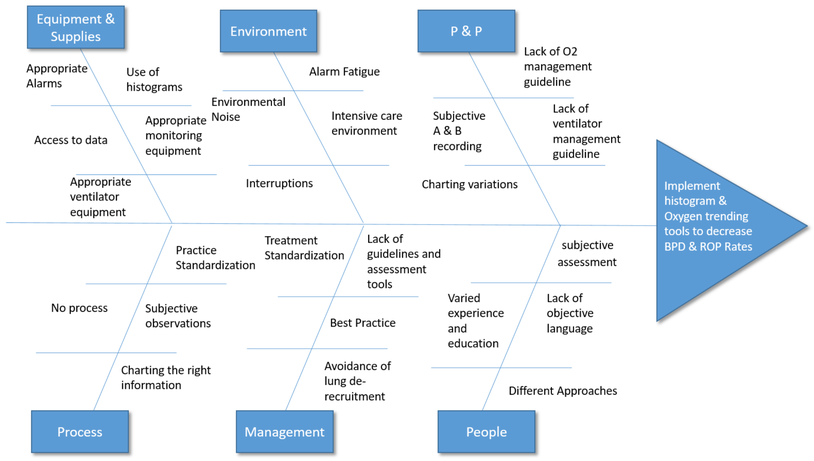
The Neonatal Intensive Care Unit (NICU) team at Victoria General Hospital planned to use oxygen histograms to monitor patient oxygenation trends and provide a communication tool for the multidisciplinary team to report objective data on patient oxygenation and respiratory status. These efforts led to the creation of an oxygen use and management guideline to better support oxygen administration and management..

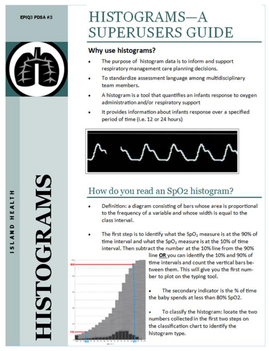


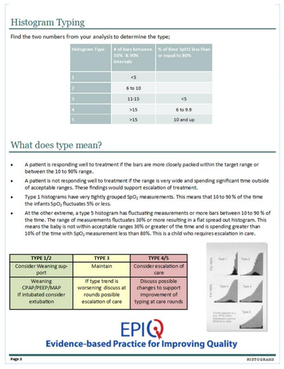
Lessons Learned

- Oxygen targeting is possible for this patient population and more work is required to meet our target goal.
- Application of a tool (histogram grading tool) with an objective and common language can assist the multidisciplinary team to communicate respiratory status.
- Involve bedside team members in the process.
- Give credit where credit is due.
- Always focus on doing better.
- Create a culture of no blame.

Drivers







Next Steps

- To continue the examination of oxygen trends and histogram grading at daily rounds.
- Continue to educate point of care clinicians on interpretation and use of histogram as a tool for oxygen administration management.

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