IMPLEMENTING A MULTIDISCIPLINARY QUALITY IMPROVEMENT INITIATIVE TO REDUCE INAPPROPRIATE TREATMENT OF VENTILATOR ASSOCIATED TRACHEITIS IN THE NICU

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Background

- Respiratory tract infections are the most common hospital acquired infection in the intensive care unit (ICU). Ventilator associated tracheitis (VAT) is a respiratory condition that lies on the continuum between respiratory tract colonization and ventilator associated pneumonia [1, 2]
- Currently, there are not published universal guidelines to aid in the diagnosis and treatment of Ventilator Associated Tracheitis (VAT) in the neonatal intensive care unit (NICU) [3]
- Inconsistent diagnosis and management of VAT in neonates can result in non-indicated, prolonged (>7 days) and broad spectrum antibiotic use, increasing risk for acquisition of multi-drug resistant organisms [4]
- Incorporating changes in secretions and Gram stain results into decision-making may reduce inappropriate treatment

Aim Statement

1. Reduce the proportion of intubated neonates treated for VAT with < 25 PMNs on Gram stain by 25% in 6 months
2. Reduce the proportion of intubated neonates with > 7 days antibiotic treatment for VAT by 25% in 6 months

Root Cause Analysis

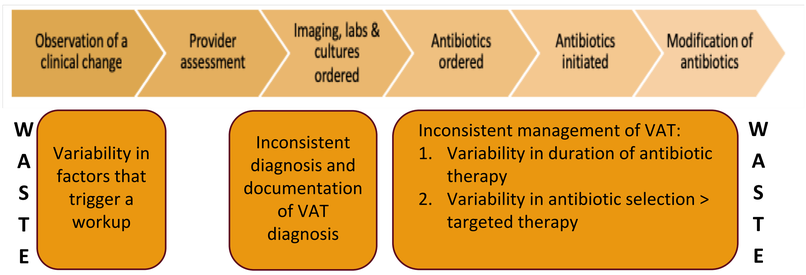
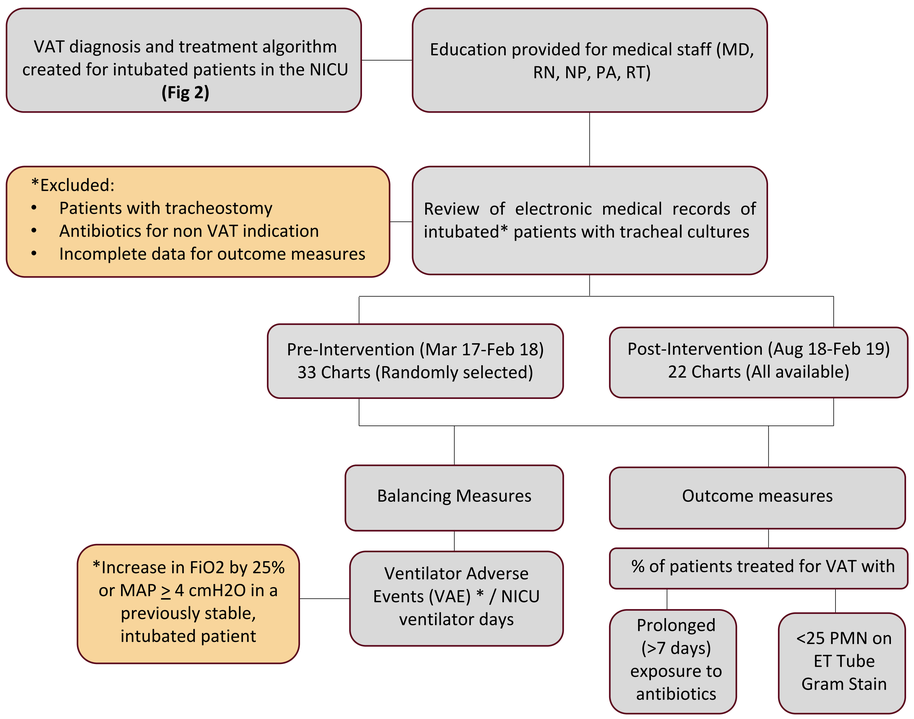


Figure 1. Process map detailing current standard work prior to initiation of new VAT algorithm

Methodology



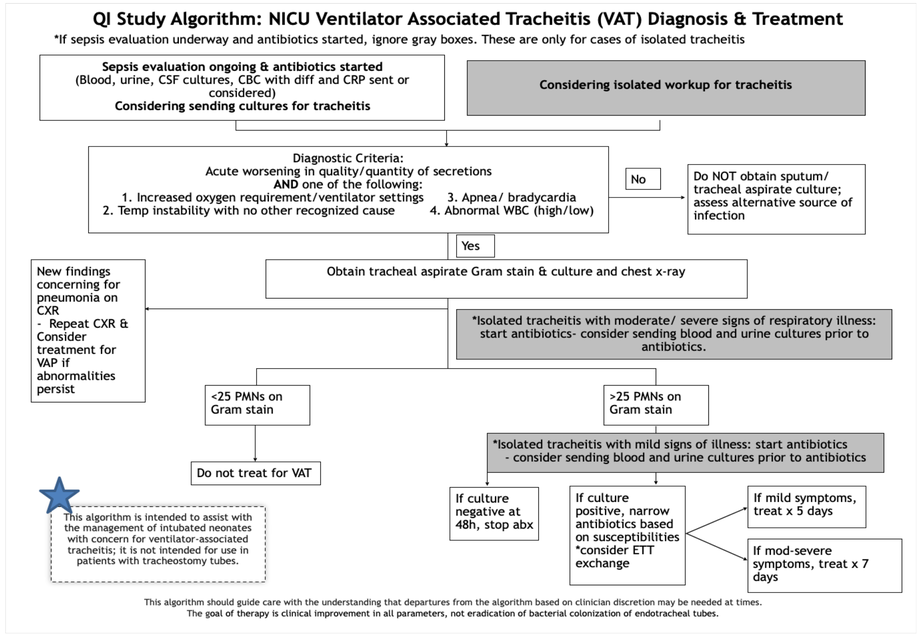


Figure 2. VAT Diagnosis & Treatment Algorithm

Results

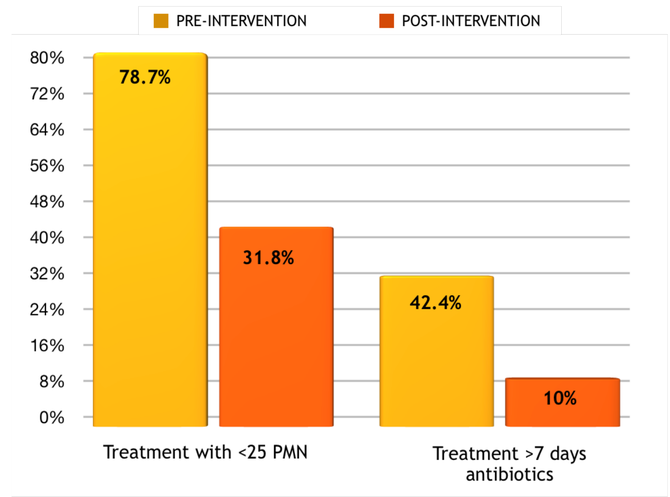


Figure 3. Pre & Post Intervention Data

	Pre-Intervention (N=33)	Post-Intervention (N=22)	Difference (%)	P Value
Patients Treated with <25 PMN	26	7	46.9	**<0.001**
Patients treated with >7 days Antibiotics	14	2	32.42	**0.012**

	Pre-Intervention (N=8589)	Post-Intervention (N=4071)	Difference (%)	P Value
VAE/NICU Vent Days	21	8	0.05	**0.694**

Conclusions & Future Directions

- Implementing a multidisciplinary QI initiative to optimize diagnosis and treatment of VAT in the NICU decreased the percent of patients treated inappropriately for VAT
- Continued monitoring and further tests of change will determine if improvement is sustainable
- Inclusion of patients with tracheostomies would expand benefits of intervention to this vulnerable subset of patients

References

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