

Implementing High Flow Nasal Cannula Therapy in Acute Care Settings –This May Get Heated!

Sonal Kalburgi, DO, MSHS

Medical Director of Holy Cross Hospital, Children's National Health System

Tina Halley, MD

4Main Medical Unit Director, Children's National Health System

Matthew Sharron, MD

Pediatric Critical Care Attending, Children's National Health System

Irini Kolaitis, MD

Instructor of Pediatrics, Northwestern University Feinberg School of Medicine, Lurie Children's Hospital

Nicole Rochester, MD

Former Medical Director of Holy Cross Hospital, Children's National Health System

Vineeta Mittal, MD, MBA

Associate Professor of Pediatrics, UTSW Medical Center and Children's Health System

Sunday, July 23, 2017, 10:15 - 11:30 am



Disclosure

We have no relevant financial relationships with the manufacturers of any commercial products and/or provider of commercial services discussed in this CME activity.

We do not intend to discuss an unapproved/investigative use of a commercial product/device in this presentation.



Learning Objectives

- Review current evidence on the use of high flow nasal cannula (HFNC) in pediatric wards.
- Compare practice patterns of high flow nasal cannula use outside of intensive care units in both university-affiliated and community hospital settings.
- Build a tool-kit for a robust implementation plan for HFNC in pediatric wards.



Session Timeline

- 10:15 – 10:20 Introduction
- 10:20 – 10:30 HFNC Practice Patterns
- 10:30 – 10:50 Breakout Session # 1
- 10:55 – 11:15 Breakout Session # 2
- 11:20 – 11:30 Conclusion



HFNC outside the ICU Practice Patterns

Sonal Kalburgi, DO, MSHS

Medical Director of Holy Cross Hospital, Children's National Health System

Tina Halley, MD

4 Main Medical Unit Director, Children's National Health System

Vineeta Mittal, MD, MBA

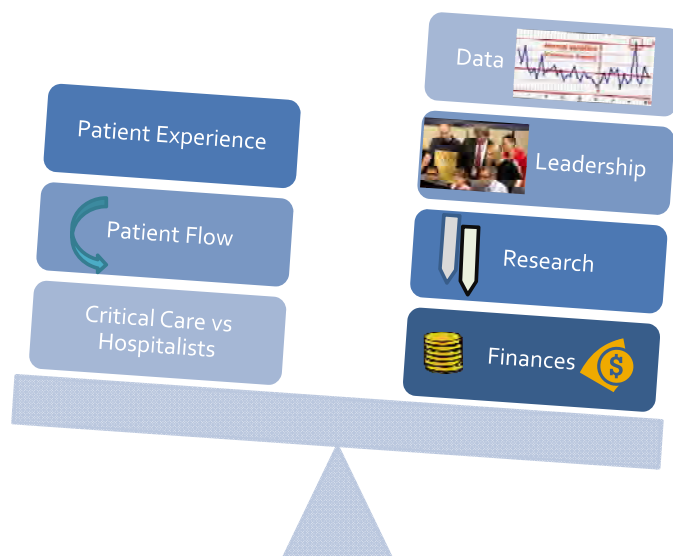
Associate Professor of Pediatrics, UTSW Medical Center and Children's Health System



***Can* you implement HFNC outside the ICU?**



What's going to tip the scale at your institution?



HFNC Outcomes

- ICU Utilization
 - Instituting a HFNC guideline outside the ICU may be associated with increased use of HFNC without a change in length of stay, or ICU transfer rate
 - Reise, et al. Clinical Outcomes of Bronchiolitis After Implementation of a General Ward HFNC Guideline. Hosp Peds Vol7, Issue 4, April 2017
 - Patients who will require ICU admission can be identified in 1st hour of admission by HR and RR changes.
 - Mayfield S, et al. HFNC oxygen therapy for infants with bronchiolitis: pilot study. J Paediatr Child Health. 2014 May;50(5):373-8.



HFNC Outcomes

- Predictors of HFNC Failure
 - High Fio₂ needs, prior intubation, and cardiac co-morbidities are associated with HFNC failure
 - Betters, K. A., Gillespie, S. E., Miller, J., Kotzbauer, D. and Hebbar, K. B. (2017), High flow nasal cannula use outside of the ICU; factors associated with failure. *Pediatr Pulmonol.*, 52: 806–812. doi:10.1002/ppul.23626
 - Hypercarbia and lesser degree of tachypnea at onset of HFNC along with no change after HFNC initiation may be associated with HFNC failure
 - Abboud, et al. Predictors of Failure in Infants with Viral Bronchiolitis Treated with High-Flow High-Humidity, Nasal Cannula Therapy. *Ped Crit Car Med.* 2012 Nov;13(6):e343-9. doi: 10.1097/PCC.0b013e31825b546f.



HFNC Outcomes

- Decreasing Intubation Rates
 - Early use of HFNC in the ED may reduce intubation rates
 - Canares, T, et al. Going with the Flow: Respiratory Care in the Pediatric Emergency Department. *Rhode Island Medical Journal*, Jan 2014.
 - HFNC outside the ICU may result in a trend toward decreasing intubation
 - Wilson, et al. Effects of a Clinical Pathway for HFNC Therapy in Bronchiolitis Outside of the Intensive Care Unit. Abstract presentation October 12, 2014.
 - HFNC use in the ICU reduces the need for intubation
 - Schibler, et al. Reduced Intubation Rates for Infants After Introduction of High-Flow Nasal Prong Oxygen Delivery. *Intensive Care Med.* 2011 May;37(5):847-52., .
 - McKiernan C, et al High flow nasal cannulae therapy in infants with bronchiolitis. *J Pediatr.* 2010 Apr;156(4):634-8.
 - A Kawaguchi et al. The Clinical Impact of Heated Humidified High-Flow Nasal Cannula on Pediatric Respiratory Distress. *Pediatr Crit Care Med* 18 (2), 112-119. 2 2017.



Building Your Team Without Losing Your Mind!



Who is in the audience?

What stage are you?

- Planning
- Implementation
- Post-Implementation

What kind of setting?

- Community
- University Affiliated

Saturday, July 22, 2017, 4:15 - 5:30 pm



Breakout Sessions

- Rotate through 2 of 4 facilitated small group discussions for 20 min each
 - Topic 1 with Vineeta: Defining a Safe Population and Safety Metrics
 - Topic 2 with Matt: Building a Project Team and Leadership Support
 - Topic 3 with Tina: Developing Staff Education Strategies
 - Topic 4 with Irini & Nicole: Developing and Evaluating a HFNC Protocol
- Large Group Report-Out (5 min) by each workshop leader to summarize highlights from discussion



Breakout Session 1





10:30 – 10:50

Please refer to worksheet



IMPLEMENTING HIGH FLOW NASAL CANNULA IN ACUTE CARE SETTINGS- THIS MAY GET HEATED!





Topic 1: Defining a Safe Population and Setting/Identifying Safety Metrics	Vineeta
1. How to define the ideal HFNC patient population and setting? What safety metrics should be considered prior to implementation?	
Key Drivers	
Stakeholders	
Action Items	
2. Who gets HFNC at your institution? Is it used consistently across different diagnoses?	
Key Drivers	
Stakeholders	
Action Items	
3. What data (if any) is already being tracked? What may you want to track in the future?	
Key Drivers	
Stakeholders	
Action Items	
4. What MD/RN/RT staffing models exist for HFNC patients? What changes may be needed?	
Key Drivers	
Stakeholders	
Action Items	

Breakout Session 2

10:55 – 11:15 am

Please refer to worksheet

Report Out

- Topic 1 with Vineeta: Defining a Safe Population and Safety Metrics
- Topic 2 with Matt: Building a Project Team and Leadership Support
- Topic 3 with Tina: Developing Staff Education Strategies
- Topic 4 with Irini & Nicole: Developing and Evaluating a HFNC Protocol



Take Home Points

- Start at the top and secure leadership commitment
- Build rapport in small groups
 - Identify allies and adversaries
- Review recent safety events/RCA's to get a pulse
- What is the data these leaders want to see?
- Talk with Finance and Case Management Departments



Questions/Comments?



Contact Info

Sonal Kalburgi, DO, MSHS skalburg@cnmc.org
Medical Director of Holy Cross Hospital, Children's National Health System

Tina Halley, MD thalley@childrensnational.org
4Main Medical Unit Director, Children's National Health System

Matthew Sharron, MD msharron@childrensnational.org
Pediatric Critical Care Attending, Children's National Health System

Irini Kolaitis, MD ikolaitis@luriechildrens.org
Seasonal Hospitalist Program Site Leader, Lurie Children's Hospital

Nicole Rochester, MD rochen@holycrosshealth.org
Former Medical Director of Holy Cross Hospital, Children's National Health System

Vineeta Mittal, MD, MBA Vineeta Mittal vineeta.mittal@childrens.com
Associate Professor of Pediatrics, UTSW Medical Center and Children's Health System

