Safe Oral Intake for Patients using High Flow Nasal Cannula Therapy: An Interdisciplinary Approach.

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Background

High air pressures associated with high flow nasal cannula (HFNC) therapy could potentially push food into the patient's trachea. Our organization sought to establish a standard approach to this clinical problem.

An interprofessional team of nurses, speech therapists, respiratory therapists, managers and an internal medicine physician defined safe oral intake as:

- No increased oxygen requirements
- No intubation or re-intubations
- No initiation of BIPAP
- No worsening chest x-ray results
- No death post feeding

Purpose

This quality improvement project aims to create clear guidelines for safe oral intake for hospitalized patients who require HFNC therapy. Utilizing a standard approach for oral intake on HFNC will reduce and in fact, prevent aspiration events and complications.

Method

Nurses initiated a test of change (TOC) on the Intermediate Care Unit (IMCU) using LEAN methodology. All direct clinical staff were educated on the standard approach including guidelines on providing oral care, titrating HFNC settings for meals and medications, and assessing for any respiratory distress. Clinical staff filled out a data collection tool that documented patient tolerance of titration, their oral intake, and any undesirable events that occurred. Nurses collected data over eight months on twenty patients.

Figure 1: Data collection tool

IMCU TEST OF CHANGE: HI FLOW NASAL CANNULA, Starting 9/17/18

Problem: Care providers are feeding patients are varying levels of High Flow Nasal Cannula support. This is a concern due to certain levels of High Flow causing a PEEP effect that can impact aspiration risk.

Hypothesis: If we develop a standard and use it 100% of the time with our HIGH FLOW NC patients, then patients will be fed safely 100% of the time. Safely defined as no need for increased respiratory support post feeding (Re intubations, BIPAP, worsening chest x-ray, death)

Please follow the steps below, provide data and place in Purple TOC folder by unit clerk at the end of your shift. Suction toothbrushes also located by Unit Clerk.

THANK YOU! Team members involved in leading this TOC, Leah Gideon (RN), Jennifer Beitel (RN), Ann Alway (CNS), Tyler Cluff (RT), Steven Miller(RT), Deb Grey(SP)

Patient Name: _____ **MRN** _____ **Date:** _____ **Nurse:** _____

What are baseline High Flow Needs?	
STEP 1: Titrate patient down to 20 LPM, 100% FIO2	
RR 30 or Less and SPO2 88-92% for 5 mins?	If YES: Proceed to step 2 If No, STOP, return to baseline, monitor pt. comment what happened.
STEP 2: Complete oral care with suction toothbrush.	
RR 30 or Less and SPO2 88-92% during oral cares?	If Yes proceed to step 3 If No, STOP, return to baseline, monitor patient and comment here.
STEP 3: Patient eat	What did they eat?
RR 30 or Less and SPO2 88-92% during feeding?	If Yes: How long did eating take? _____ When finished return to baseline or , rate determined by RT and RN If No: STOP, return to baseline, monitor patient and comment here what happened

Figure 2: Set up of Swallow Precautions for HFNC

Results

- Of the twenty patients who qualified for the TOC, there were no new cases of aspiration pneumonia or undesirable events after HFNC was initiated.
- One modified barium study was performed on a patient who was on HFNC at 20L of oxygen. The barium study was inconclusive when relating clinical events to food intake.
- The interprofessional team gained new knowledge by collaborating together on this project.
- Other nursing units are now successfully using this standard approach. Further study is needed on the safety of HFNC therapy and oral intake, including food choice and texture

References

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