

Quality Improvement Activity: Assessment of patient on high frequency oscillatory ventilation

Scenario:

The patient was born at 32 weeks/2 days and was immediately transferred to the NICU. The patient presented with cyanosis around the mouth, tachypnea, flaring of the nares, and chest retractions were also present. The pt. was diagnosed with Respiratory Distress Syndrome shortly after being admitted into the NICU. The patient was put on a high frequency oscillatory ventilator. The frequency was set at 14 Hz with a 33% inspiratory time. Power/Amplitude was set at 2.0. The nurse was ordered to check the patient's ABG's every 15-20 minutes until the PaCO₂ was 40-60 or within target range. The nurse was also ordered to titrate the Power/Amplitude setting based on PaCO₂ desired. The NICU was at max capacity that day and two staff members had called in. The nurse was assigned three patients on ventilators and had multiple orders that needed to be accepted. The nurse forgot that the patient's ventilator alarm was silenced and she was helping another nurse who had gotten behind on her hourly cares. When the nurse finally had the time to check on her patient she saw that her patient was showing symptoms of a pneumothorax.

Describe the scenario. In what way did the patient care or environment lack? Is this a common occurrence?

In the scenario above, the patient was admitted to the NICU floor for RDS. The patient was put on a high frequency ventilator and was ordered to be monitored every 15-20 minutes. Due to an overflow of patients and a short staffing issue, the nurse that was assigned this patient failed to assess the patient as frequently as she should have. This led to the patient experiencing volutrauma from too much vent pressure. The vent alarms were also silenced and the nurse did not realize because she was too busy to check. If the alarms would have been on the nurse would have been alerted that the pressure had gotten too high.

What circumstances led to the occurrence?

The circumstances that directly led to this occurrence were poor patient assessments due to the staffing issue. If there had been the correct number of nurses on the floor, the nurse would have not had three high acuity patients and wouldn't have had to help other nurses with their patients.

If the nurse had less patients than she would've had more time to check on her patients and their vents and make sure their alarms were not silenced.

In what way could you measure the frequency of the occurrence? (interview nurses, examine charts, patient surveys, observation, etc.)

The frequency of ill performed assessments of patients on high ventilatory ventilators could be measured by examining the patient assessment charts and maintaining a close eye on the nurses to make sure they are correctly assessing the patients and not falsifying documentation. To ascertain whether the nurses are overburdened with the number of patients they are caring for, it would also be helpful to interview the nurses.

What evidence-based ideas do you have for implementing interventions to address the problem?

I think it would be beneficial to hire more nurses for the unit or have some nurses from staffing come in for the days where there are a lot of patients or when multiple nurses call in sick. I think short weekly meetings could be done before shift change to ask the nurses if they are feeling overwhelmed or if they feel like they are needing help. At the beginning of each shift the nurses should go around to all of the monitors and vents and make sure they are not silenced. Then they should have to document that they checked the alarms once a shift. They could also implement a reward system (possibly a gift card at the end of each month) for the nurses who are keeping up with the needed assessments and documentation.

How will you measure the efficacy of the interventions?

Measuring the efficacy of these interventions can be done by calculating the amount of high frequency oscillatory ventilation injuries that occur each month and by making sure the number is decreasing or hopefully staying at zero injuries per month. A nurse/staff survey could also be done daily or weekly to see if interventions done to provide extra help to the nursing staff has decreased their workload and stress levels.