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Quality Improvement Activity: Tube Feeding Safety Protocol

Scenario

A 24-month-old female is admitted to the emergency room with a history of short bowel syndrome. From the time of diagnosis to the present time, the patient's family has been able to treat the diagnoses of short bowel syndrome by following a special diet and administering nutritional supplements. However, the patient has recently been experiencing increased diarrhea and fatigue. The parents are worried that the patient is malnourished. The doctor in the emergency room decides that the patient should be admitted. He writes an order for a nasogastric tube to be inserted and tube feedings administered. A nurse on the pediatric floor, and her student, admit the patient and complete their admission assessment. The nurse is able to insert the feeding tube without a problem. The placement of the tube is verified by auscultation, aspiration of gastric contents, and an x-ray. The nurse and the student auscultate the bowel sounds and check residual before preparing the tube feeding. The nurse verifies the orders for the feeding, primes the tubing, sets the pump to the correct rate, raises the patient's HOB to 30 degrees, and starts the feeding. The nurse and the student leave the room to tend to other patients. The call light goes off and the mom of the patient with short bowel syndrome calls to ask the nurse to help her change her daughter's diaper. The nurse and the student go in, lay the patient's HOB down, change the diaper, and finish their conversation with the mom about the Texas Tech football game that happened a couple of days ago. The nurse gets called to another patient's room and leaves. An hour later the call light goes off again and the mom of the patient begs the nurse to "please hurry to my room, my daughter is choking and gasping for air." The nurse runs to the room and finds that she failed to raise the patient's HOB after changing the patient's diaper and the patient is aspirating on her tube feeding. The nurse stops the tube feeding and raises the HOB to 90 degrees or more while the student takes the patient's vital signs. The patient has elevated blood pressure, heart rate, and respiratory rate. The RT was called and arrived to begin oxygen therapy on the patient. The patient is later taken for a bronchoscopy to obtain a culture and attempt to aspirate feeding from the lungs. The doctor also orders antibiotics for the patient to decrease the risk of aspiration pneumonia. Once the patient is back on the floor, the nurse starts the antibiotics and ensures the patient is on continuous pulse oximetry. The cultures come back (+) for a gram-negative bacteria and aspiration pneumonia is diagnosed. The patient remains in the hospital on IV antibiotics for the remainder of their treatment.

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 hospital due to uncontrolled short bowels syndrome and risk of being malnourished. The patient was admitted and a nasogastric tube was inserted and used for enteral feedings. The patient aspirated during her initial feeds due to the HOB being lower than 30 degrees after a diaper change. This led to aspiration pneumonia and antibiotic therapy. The patient's care was lacking during the tube feeding. The nurse should have paused the feedings before laying the patient down to change her diaper. Also, if the nurse and nursing student double checked the position of the patient's bed and stayed focused on patient care there would have been an opportunity for one of them to notice the HOB and decrease the chance of aspiration. Aspiration pneumonia is caused by bacteria in the lungs and is often the result of aspiration during tube feedings. The nurse and nursing student should have stayed

focused on the patient care and taken the time to double check everything before leaving the room. The patient's safety is always more important than engaging in distracting conversation. Distractions are common in the healthcare setting and frequently lead to nurses missing small, but vital steps in ensuring patient safety. When a patient is receiving tube feedings the protocol is for the patient's HOB to remain 30 degrees or higher during the feeding, and for an hour after the completion of the feeding. Oftentimes the patient's HOB is lowered for linen changes, diaper changes, repositioning, etc. and the nurse often forgets to return it to 30 degrees or more. This leads to frequent occurrences of aspiration during tube feedings.

What circumstances led to the occurrence?
The circumstances that led to this occurrence were the nurse and nursing student not pausing the tube feed to lay the patient down to change their diaper and the distracting conversation that was taking place during the patient's care.

In what way could you measure the frequency of the occurrence? (interview nurses, examining charts, patient surveys, observation, etc.)
The frequency of tube feeding aspiration can be measured many different ways. Due to the risk of aspiration pneumonia and other respiratory complications, this situation is something that should be taken seriously in pediatric and adult care settings. One way would be by closely examining each patient's chart and their medical history. We could also get this information by asking each patient directly through a patient survey, or even by including it in the admission questions. The patient surveys could also include asking the patients about the education they received regarding tube feedings and if they feel that they can safely administer their feedings at home with a low chance of aspiration. Lastly, interviewing nurses could prove beneficial. It would be important to assess the nurse's knowledge of safe tube feeding protocol, as well as how often they follow this protocol or how often they have had patients aspirate.

What evidence-based ideas do you have for implementing interventions to address the problem?
Stressing the importance of safe tube feeding protocols to staff members would most likely be the first step in implementing interventions regarding unsafe tube feedings. Secondly, having a training or education meeting on safe tube feeding protocols would allow the nurses to be more competent. Providing handouts, or educational posters around the unit would make the information easily accessible when the time comes for a nurse to administer a tube feeding to a patient. In the event of aspiration during tube feeding, or other complications, the protocols should be reinforced. The healthcare providers directly involved in the event should be held accountable by identifying the unsafe actions and identifying how they can ensure patient safety in the future. The incidents of aspiration pneumonia and tube feeding complications can be avoided by following the safety protocols and ensuring that we are assessing our patients. By making sure that nurses understand there is zero tolerance for these circumstances and providing them with the education to feel competent and safe, unsafe tube feedings can largely decrease.

How will you measure the efficacy of the interventions?

The efficacy of these interventions can be achieved by having charts on each floor that keep track of the unsafe occurrences each month. Anytime a new event occurs it will be documented and addressed. Measuring the efficacy of these interventions could also be done by doing follow-up patient and nurse surveys and comparing the results with the previous surveys.