

Nursing Process Paper of the Pediatric Patient

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L.M. is a Caucasian-American nine year old male who weighs 45.9 kilograms (101 pounds) on January 25 and was admitted to Aultman hospital for intractable vomiting and abdomen pain according to the patient's medical chart. He is 137.20 cm tall and has no known allergies. The patient is a Full Code-Ordered which means the doctors are obligated to perform life-saving measures if the patient goes into respiratory or cardiac arrest (Black, Hawks, 2010). According to the patient's chart he was born on March 13, 2001. L.M. was at the hospital with his mother, who was nine weeks pregnant. After her marriage with L.M.'s father, she remarried and is currently pregnant with his child. L.M. has three sisters total of which only one is his real sister who is seven years old, by his mother, and the remaining two are from his father's side with another woman. L.M. lives with his mom in Canton, Ohio but visits his father on the weekends. L.M. is in the fourth grade at Whipple Heights Elementary School. His mother used to work at a weight loss health clinic but then she started taking classes at Brown Mackie. Since she found out she was pregnant she took a break from everything. It is presumed that most likely her husband's income is the major support since she is no longer working, although they do have health insurance according to the mom and the medical chart. L.M. has dark brown hair and eyes and seemed very ill.

The patient presents with a four day history of intractable vomiting. The symptoms started on Saturday January 22<sup>nd</sup> when he went to a birthday party. Afterwards, he went to eat at McDonald's where his mother also ate but did not get sick. The mother also informed everyone that nobody else at the party became sick which is what made her wonder why L.M. was so under the weather. That Saturday night he was at his father's house when he woke up in the middle of the night and threw up. L.M. was taken to the emergency room and released but

unfortunately returned January 25<sup>th</sup> when he was admitted and began throwing up once again. Mom reports that the patient has tolerated sips of water, Gatorade, and Gingerale, but nothing solid and has been vomiting almost immediately after something hits his tongue. According to the medical chart, the patient had a history of cycling vomiting which started when he was about seven years old. This continued once approximately every three months until nine months ago. The mother says these episodes were brought on by my stress but not at this time.

The patient complains of headache, nausea and vomiting, lower abdominal pain that does not go away, hot flashes then gets cold and has the chills/shaking and appears restless. He describes his tummy pain as being cramping and was very hesitant to people touching this area. L.M. would yell or say “ouuuchh” when any hand barely came in contact with this area. He reports that he is still very hungry since the last meal was Saturday and that he is still trying to eat, but simply unable to keep anything down. The patient states that he’s urinated less and barely had any bowel movements. The last bowel movement was Tuesday night. The stool was described as slimy. During the time that L.M. was at the emergency room he was rehydrated, CBC and CMP were reported relatively normal and lipase was also within normal limits. A CT was normal once again. He was given Zofran IV which helped his vomiting but after he went home he began once more. When he returned the second time, the patient was rehydrated for a second time but wasn’t able to keep anything down even with Phenergan IV and was admitted to the pediatric floor for rehydration and observation.

Nine year old L.M. has a family history notable for depression on the father’s side and anxiety on the mother’s side of the family. His sister’s ages are 9, 7, 2, and all are healthy with no medical problems. As stated by the medical chart, L.M. has a past medical history of cycling vomiting precipitated by stress. When the patient and his family moved where they currently

live, L.M. was diagnosed with attention deficit hyperactivity disorder (ADHD) and anxiety. He had reflux as an infant which did require one week of hospital stay but no NICU time. He was a full-term delivery with no complications with pregnancy.

As indicated by Erikson's theory of psychosocial development, L.M. should be in the "Industry Versus Inferiority" stage since he is nine years old. Erikson exclaims that the middle years of childhood are characterized by development of new interests and by a focus on intellectual or cognitive pursuits. He states that the child takes pride in accomplishments such as sports, home, school, and community for example. Developing a sense of "industry" provides the child with purpose and confidence in his or her ability to be successful (Ball, Bindler, Cowen, 2010). During my shift, L.M. seemed very quiet and shut off. Even though he was throwing up every fifteen minutes, his mother made it evident that her son has anxiety problems and that it is hard for him to "open up." He didn't want to interact with anyone, even when the physician asked him questions he would complain to ask his mom because he didn't feel good to talk although his language skills were excellent. This is understandable because he was nauseated 24/7. The patient's mom informed the staff that he was running for class president at school. When the patient was asked about this exciting experience, he sadly responded "yeah who cares though, I didn't win." The patient's mother didn't say anything at this point. This incident demonstrated that the patient obviously might have some issues meeting the Industry Versus Inferiority stage which Erikson described. L.M. does not feel confident in his ability to be successful.

To add on to this issue, the patient verbalizes that he gets bullied at school by another boy. He seems affected by this because he states it in a stressful way. A child his age does not need any stress, let alone that he was diagnosed with ADHD the previous year. The bullying

problem adds on to the stress in his life which point in a direct correlation direction to the recurrent vomiting episodes throughout his life. This may be very well the hidden motive for his sickness. Although anxiety problems that result in fears, worries, stress, and sleep disorders are common health disorders among school-age children, anxiety affects functioning and has more striking characteristics. These include clinging, abdominal pain, headache, fear of embarrassment, and refusal to attend school. Posttraumatic stress syndrome and depression may also be seen (Ball, Bindler, Cowen, 2010). Mom verbalized that before the ADHD diagnosis, school was a great deal of struggle for him but since he has started his medication (Intuniv), it has done wonders for him. He is currently on the Merit List and is striving for the Honor List. This will help a lot with this developmental process of industry that Erikson explains.

If the child cannot accomplish what is expected, however, the result will be a sense of inferiority. The child's sense of industry must be balanced by a realistic perspective gained over time, that there is always more to learn and that one cannot be the "best" at every activity. (Ball, Bindler, Cowen, 2010). Erikson seems to hit this issue head on. The patient seemed gloomy when he emphasized that even though he ran for class president at school, he did not win. This shows that the child does not have enough positive reinforcement from home to make him feel superior rather than inferior. The fine motor and gross motor skills were appropriate although my patient was in bed most of the time. He plays baseball which is something that reveals his appropriate coordination and motor skills. The only time he was out of bed was to urinate or to get the puke bucket for more vomiting. Since the patient weighs 45.9 kg and he is 1.372 meters tall, his body mass index (BMI) is in the 95<sup>th</sup>+ percentile for a nine year old boy. This is a concern.

Daily estimated calories for a nine year old boy are 1800 kcal. Although the patient is not quite to the puberty period when the all time high 2200 kcal are needed daily for proper growth, it's still important to make sure he is getting balanced meals with fruits and vegetables as well (Ball, Bindler, Cowen, 2010). Since L.M. is in the 95<sup>th</sup> percentile of his body mass index, concern about what types of foods are being consumed. The mother of the child explains that she believes her son is a good eater. A typical day for him starts with cereal or French toast for breakfast, sandwiches or burgers for lunch, and dinner includes mashed potatoes, vegetables, and any kind of meat. Snacks include anything from chips to muffins to candy. The patient is not a picky eater in any way and is willing to try anything. He always has an appetite, even when he is sick he complains of being hungry since he has not been able to keep any food in his belly since Saturday. The patient's food habits can be positive and negative. It may be a positive factor that L.M. is not picky and likes anything because this way he can get all the different nutrients his body needs. On the other hand, a negative factor is overeating, eating junk, and obesity. For example, the last meal the patient had before he began vomiting was McDonald's. After several decades of stable statistics regarding overweight in children, the numbers are now skyrocketing. The Third National Health and Nutrition Examination Survey found that 11% to 15% of child and adolescent groups were overweight or fell at or above the 95<sup>th</sup> percentile for BMI (Ball, Bindler, Cowen, 2010). This can be a potential problem because he is already in the 95<sup>th</sup> percentile of his BMI. An alternative daily intake can consist of orange juice, cereal, or bagel with jam for breakfast, turkey sandwich and an apple instead of a burger. Dinner can consist of ½ cup of pasta with meat sauce, dinner salad, 1 cup of milk, and snacks can be pudding, yogurt or popcorn instead of chips and candy. This tiny modification can help the patient immensely in proper nutrition and help get him in the correct BMI percentage.

During a typical week at home, the mother feels her son gets enough exercise because he is active and plays a great deal. The patient has never been on any type of diet or tried to gain or lose weight. He seems very comfortable with himself and the mother doesn't show much concern about his weight being a problem. The patient notifies me that he is on a baseball team and he used to play soccer in the spring, summer, and fall.

Cyclic vomiting syndrome (CVS) is characterized by periodic, recurring attacks of severe vomiting and nausea that last can for hours, even days. Most of the time there are no symptoms and it results in need of intravenous hydration in 58% of children (Tarbell, Li, 2007). Although it was originally thought to be a pediatric disease, CVS occurs in all age groups. Cyclic vomiting in children occurs between the ages of three and seven. Since there are no initial symptoms, it is hard for a diagnosis of this illness to be made. A doctor must look at symptoms and medical history to rule out other common diseases or disorders that can cause nausea and vomiting. L.M is diagnosed with this because he has had periods similar to this one which got him hospitalized this time. The patient's chart clearly states that he has a past medical history for cycling vomiting precipitated by stress. The mother also stated that the cyclic vomiting started when he was seven years old. This very much supports the typical age range this syndrome occurs/starts. In this case, the patient's medical chart suggests that his cyclic vomiting started when he was seven years old. Sufferers may vomit or retch up to twelve times an hour, and an episode may last from a few hours to well over three weeks and in some cases into months. This characterizes L.M. entirely since he was throwing up uncontrollably. Between episodes the sufferer is usually otherwise normal and healthy but can be in a weak state of fatigue or have muscle pain. Episodes can be so severe that a person has to stay in bed for days, unable to go to school. Common triggers in children include emotional stress. Stress caused by many factors, such as physical trauma,

anxiety, and pain, can affect fluid and electrolyte balance. When stress occurs, aldosterone production is increased, causing EFC retention (Craven, Hirnle, 2009). Because other more common diseases and disorders also cause cycles of vomiting, many people with CVS are initially misdiagnosed until other disorders can be ruled out. According to Tarbell and Li, “Preliminary studies also suggest that CVS is associated with internalizing psychiatric disorders” (Tarbell, Li, 2007). Last year, L.M. was diagnosed with attention deficit hyperactivity disorder and anxiety.

A person with CVS may experience abdominal pain, diarrhea, pallor, migraine/headache, fever, dizziness, and sensitivity to light during vomiting episodes. Continued vomiting may cause severe dehydration that can be life threatening. Symptoms of dehydration consist of thirst, decreased urine output, paleness, exhaustion, and restlessness (Ball, Bindler, Cowen, 2010). The patient displayed most of the symptoms preceding almost perfectly. To begin with the most critical ones, dehydration was certainly evident. Although the patient did have an IV of D5/0.9NS, he was hardly drinking anything and when he did get something down he threw it right back up shortly. The normal saline restores water and sodium loss; maintains sodium and chloride at present levels (Ball, Bindler, Cowen, 2010). Found in blood and other body fluids, electrolytes are minerals that can carry an electrical charge. An optimal balance of electrolytes is critical for overall health, helping to keep the body in a state of internal balance. They play an important role in facilitating and promoting a number of important body processes such as keeping fluid levels within the body in healthy balance, maintain optimal levels of blood acidity and facilitate muscle function (Ball, Bindler, Cowen, 2010). Since the patient is vomiting so often, acid and bile may be vomited. If sufficient gastric juice is lost from the stomach, hydrogen, sodium, and chloride ions are depleted, increasing the risk for extracellular fluid

volume deficit or metabolic alkalosis. Gastric fluid also high in potassium and excessive losses may contribute to hypokalemia. Vomiting compounds fluid and electrolyte problems because the ability to maintain adequate intake is reduced (Craven, Hirnle, 2009). Clearly, without these key minerals the human body cannot function.

The patient's symptoms were as expected for cyclic vomiting and dehydration. He was pale, abdominal pain was verbalized constantly, light sensitivity; exhaustion was obvious, restlessness, shaking/chills, headache and hot flashes. The restlessness was most likely due to his dehydration which can become life threatening if it is not treated. The physician's order is "sips and chips". This oral treatment is supposed to provide additional help to the child's dehydration. "Vomiting and diarrhea are common manifestations of disease in children throughout the world, and each year up to five million children die from dehydration related to vomiting" (Ball, Bindler, Cowen, 2010). According to Tarbell and Li's study, a predominance of internalizing disorders, especially anxiety disorders, was reported in the children and adolescents (Tarbell, Li, 2010). Since L.M. was diagnosed with ADHD and anxiety, this supports the doctors' findings of cyclic vomiting and anxiety disorders. The patient's symptoms are assessed and documented, vital signs monitored, fluid and electrolyte balance is maintained and prescribed medications administered to relieve nausea and vomiting. A calm, stress-free environment should also be arranged (Venes, 2010).

Most of the time the patient's lights were off and the door was closed which assisted for a stress-free environment. Before entering the room, privacy was offered by means of knocking before entering. As previously noted, he had an IV in the left antecubital of D5/0.9NS at 110 cc/hour. This was checked every two hours to make sure the patency was good. Oral care was frequently suggested although the child refused every time and kept delaying. His mother, who

was also in the room, did not intrude on this conversation all day. The patient obviously needed vigorous encouragement with getting cleaned up and given that the mother did not intervene proves L.M. needs more involvement in his life from his family. Throughout the shift, liquid intake was encouraged to help rehydrate the child. Reminders would be given to sip apple juice and water when entering the room. This rarely happened because once again, the mother did not participate in this encouragement which could have helped a lot since mom makes the rules at home. Getting him to do this was also very difficult because he was throwing up most of the time and reaching for the bucket. Cold compresses for the forehead were offered to the patient to help alleviate the nausea. Antiemetic and antiulcer agents were administered via IV push. They were both pushed over one minute using the pinch and push method. During this time, the patient seemed very interested in what he was receiving and asked questions. The questions regarding the medications given were answered and the patient verbalized that he understood. At the end of the shift, total oral intake consisted of 300 cc, total emesis output was 560 cc and 525 cc of urine was voided. Every time vomiting was heard, the patient was assisted with a cleaned basin after measuring every drop of the previous emesis. The total IV volume infused was 1603 cc. Strict intake and output were a priority due to dehydration. Pain assessments were done every two hours and a CT of the abdomen and pelvis was performed which was normal. Absolutely no other lab values were found on this patient. Besides the normal CT of the abdomen and pelvis, no other diagnostic tests were performed. Education was accomplished on relaxation techniques such as breathing exercises but L.M. could not engage in these. He verbalized he was too nauseated.

The physical assessments had several significant results and/or findings which are a result of the patient's cyclic vomiting. First and foremost, he was vomiting from the beginning of the

shift until the very end. Just as the condition states the vomiting can last for hours and even days. L.M. was pale, had dry skin, and was restless. All these symptoms are in a direct correlation with cyclic vomiting. Evidently he was dehydrated which was a critical result of the “disease”. These symptoms are very important because dehydration can be very serious and life threatening. It is important to check the integumentary system such as skin turgor and level of consciousness for clues of these symptoms as well. The patient’s pain was localized in the abdomen as a rate of five, based on a ten point scale. His abdomen was firm and the bowel sounds were hypoactive. This is perhaps because he is constipated and has not had much of a bowel movement since Monday which was a very small amount. Feces become hard and decreased in number because of compensatory reabsorption of fluid from the color (Black, Hawks, 2010). This is also important because it might be stress-related and also due to the history of anxiety, as this is already a problem in the patient’s life. The ultimate important portion of a physical assessment is strict intake and output (I&O) and daily weights to see additional fluid or losing fluid. Monitoring the child carefully and implementing safety precautions as necessary is also beneficial (Ball, Bindler, Cowen, 2010).

<b>Famotidine 15 mg IVP BID</b>	Antilucer agent, histamine h2 antagonists. Inhibits the action of histamine at the H2-receptor site located primarily in gastric parietal cells, resulting in inhibition of gastric acid secretions	Patient is taking to decrease the secretion of gastric acid due to intractable vomiting and an empty stomach.	Recommended dose: 0.5mg/kg/day	No this is not a safe dose because the 15mg exceeds the safe dose of 11mg *	20mg/2mL solution vial 15 x 2=30 30/20=1.5mL  0.5 x 45.9 kg=22
<b>Metoclopramide 10mg IVP every 6 hours</b>	Antiemetic; Blocks dopamine receptors in chemoreceptor trigger zone of the CNS.	Patient is taking to decrease nausea and vomiting.	Recommended dose: 0.15-0.5 mg/kg as a single dose. (up to 10 mg)	Yes, this is a safe dose because 10mg falls in between the safe dose.	0.15 x 45.9 kg=6.8 0.5 x 45.9=22.95
<b>IV: D5/0.9NS (1000mL) @ 110mL/hr</b>		Patient has this IV fluid at this rate and amount to keep him hydrated	Recommended maintenance rate: 85 cc/hour	Yes, this is safe because what I calculate was the maintenance rate which is usually around 1.5 times more. Patient is also on the heavier side when it comes to weight for his age.	10 kg x 4=40 10 kg x 2=20 25.9 kg x 1=25.9 40+20+25.9=85.9
<b>Acetaminophen 650mg PO every 4 hours</b>	Antipyretics, nonopioid analgesic; inhibits the synthesis of prostaglandins that may serve as mediators of pain and fever, primarily in the CNS.	Patient is taking this medication as needed for pain.	Recommended dose:15 mg/kg/dose every 4 hours.	Yes, this is a safe dose because the ordered 650mg is less than the safe dose of 688.	160mg/5mL suspension  650 x 5=3250 3250/160=20mL  15mg x 45.9 kg=688
<b>Ketorolac IVP 25mg every 6 hours</b>	Nonsteroidal anti-inflammatory agents, nonopioid analgesics; Inhibits prostaglandin synthesis, producing peripherally mediated analgesia.	Patient is taking this medication as needed for pain,	Recommended dose:0.5 mg/kg/dose every 6 hours	No this is not a safe dose because the ordered amount of 25mg exceeds the recommended dose of 22.95 *	30mg/1mL vial 25 x 1=25 25/30=0.83  0.5mg x 45.9 kg=22.95
<b>Ondansetron IVP 4mg every 4 hours</b>	Antiemetic; Blocks the effects of serotonin at 5-HT3-receptor sites located in vagal nerve terminals and the chemoreceptor trigger zone in the CNS.	Patient is taking this for nausea and vomiting.	Recommended dose: >40kg= 4 mg every 4 hours	Yes this is safe because the ordered 4mg is exactly what is recommended for >40 kg.	4mg/2mL vial 4 x 2=8 8/4=2mL  4mg=4mg
<b>Intuniv 2mg PO daily</b>	Mechanism of action in ADHD is unknown.	Patient taking for increased attention span for ADHD.	Recommended dose: 1 mg daily in morning; may be increased by 1 mg/day at weekly intervals to achieve dose of 1-4 mg/day	Yes, this is a safe dose because 2 mg is between 1-4mg/day	N/A

**Scheduled Meds. AS NEEDED meds. Home Meds.**

\*All medication info. (Deglin, Vallerand, 2010)

**Primary Nursing Diagnosis:** Ineffective Coping R/T mental disorder AEB. . .

(Carpenito-Moyet, 2010)

Data:

-History of ADHD; Rationale: The disorder is marked by brain maturation delay in the area of self-regulation. Since self-regulation is delayed, this greatly influences healthy coping mechanisms. Because of these behaviors, the child often has difficulty developing and maintaining social relationships and may be teased by other children.

-Anxiety disorder; Rationale: Children with anxiety disorders are excessively worried about many things and are difficult to reassure; therefore, coping is a serious issue for them. They are not able to distract themselves from the worry which impedes any healthy and effective coping.

-Patient states, "I don't want to talk right now, ask my mom."; Rationale: refusal to talk about emotions is a sign of ineffective coping mechanism (Ball, Bindler, Cowen).

Short term goal: The client will accept support through the nursing relationship by eye contact and signs of acceptance during clinical shift.

Interventions:

-Attempt to keep a calm and simple environment at all times; Rationale: Children with attention disorders cannot filter extraneous stimuli and therefore respond to everything, thus losing focus (Ball, Bindler, Cowen, 2010).

-Spend time with the client and provide supportive companionship after a vomiting episode or as needed; Rationale: This gains trust and willingness to communicate for the patient (Ball, Bindler, Cowen, 2010).

Long term goal: The client will verbalize feelings related to emotional state by discharge.

Interventions:

-Assist the client in identifying problems that he or she cannot control directly; help the client to practice stress-reducing activities for control as needed; Rationale: Cognitive interventions help the person regain control over his life. They include identifying autonomic thoughts and replacing them for positive thoughts (Ball, Bindler, Cowen, 2010).

-Encourage the client to evaluate his or her behavior (example: "Did that work for you? How did it help?"); Rationale: Focused questions help facilitate therapeutic communication (Ball, Bindler, Cowen, 2010)

The long term goal was not met entirely since the patient did not verbalize the feelings of his emotional state, but he exhibited signs and clues which demonstrated his feelings a lot. At the end of the shift discharge was still not ordered. The short term goal was met. The client eventually accepted support through the nursing relationship by eye contact and signs of acceptance during clinical shift. Although the patient did not appear to be feeling a whole lot better health-wise, he eventually opened up and asked questions. During clinical shift, deep breathing exercises were encouraged many times to try and relax. Most of the time the patient's lights were off and the door was closed which assisted for a stress-free environment. Before entering the room, privacy was offered by means of knocking before entering. A lot of time was spent in the patient's room aiding at the bedside during vomiting episodes. Whether it was for

emotional support or just cleaning up help, the patient was given support. The patient showed signs that the mother exhibited to emotional support during this time of stress. Possible frustration was noted.

**Secondary Nursing Diagnosis:** Deficient Fluid Volume R/T active fluid volume loss and inadequate intake AEB. . .

(Carpenito-Moyet, 2010)

Data:

- intractable vomiting/nausea; Rationale: Severe vomiting is a common cause of dehydration and deficient fluid volume (Ball, Bindler, Cowen, 2010)

- headache/restlessness; Rationale: headache and restlessness are early signs of fluid deficit progression (Black, Hawks, 2010)

-↓ urine output (oliguria); Rationale: Inadequate circulation to the kidneys (Ball, Bindler, Cowen, 2010)

Short term goal: The client will have decreased vomiting episodes of 5 or less episodes during clinical shift.

Interventions:

-Offer small amounts of clear fluids (“of choice”) and ginger beverages hourly and keep fluids within reach at all times; Rationale: This will reduce the risk of dehydration and provide adequate hydration. Ginger has been found effective for treatment of nausea (Ball, Bindler, Cowen, 2010).

-Apply a cool, damp cloth to the client's forehead, neck, and wrists as needed for comfort;

Rationale: Comfort measures also reduce the stimuli for vomiting (Carpenito-Moyet, 2010).

Long term goal: The client will tolerate oral rehydration of sips and chips without vomiting episodes within 72 hours.

Interventions:

-Instruct parents to aid in administering 1-3 teaspoons of liquid every couple of minutes, even if the child vomits; Rationale: Small amounts of the fluid may still be absorbed. Every little bit counts (Ball, Bindler, Cowen).

-Teach the client/family how to observe for dehydration and to intervene by increasing fluid intake by discharge; Rationale: Careful monitoring after discharge will be needed for at-risk clients. Knowing and recognizing symptoms can prevent hospitalizations and further complications (Ball, Bindler, Cowen, 2010).

The short term and long term goal was not met because the patient simply could NOT keep anything down. The patient did not have decreased vomiting episodes of 5 times or less during clinical shift. Throughout the day the patient had many episodes until administration of antiemetic and antiulcer agents which were administered via IV push. These consisted of Famotidine 15 mg IVP BID and Metoclopramide 10mg IVP every 6 hours They were both pushed over one minute using the pinch and push method. During this time, the patient seemed very interested in what he was receiving and asked questions. The questions regarding the medications given were answered and the patient verbalized that he understood. At the end of the shift, total oral intake consisted of 300 cc, total emesis output was 560 cc and 525 cc of urine

was voided. Every emesis and urine output was measured and then cleaned up. A cool towel was offered to help with nausea and sips of water were always encouraged.

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