

Hyperbilirubinemia

SKINNY Reasoning

Sarah Daniels, newborn infant

Primary Concept		
Elimination		
Interrelated Concepts (In order of emphasis)		
Clinical Judgment Patient Education		
NCLEX Client Need Categories	Percentage of Items from Each Category/ /Subcategory	Covered in Case Study
Safe and Effective Care Environment		
• Management of Care	17-23%	X
• Safe and Infection Control	9-15%	X
Health Promotion and Maintenance	6-12%	X
Psychosocial Integrity	6-12%	X
Physiological Integrity		
• Basic Care and Comfort	6-12%	x
• Pharmacological and Parenteral Therapies	12-18%	X
• Reduction of Risk Potential	9-15%	X
Physiological Adaptation	11-17%	X

SKINNY Reasoning

Part 1: Recognizing RELEVANT Clinical Data

History of Present Problem:

Sarah Daniels was born six hours ago by vaginal delivery after 22 hours of labor at 36 weeks gestation because of premature rupture of membranes. She weighed 9 lbs 0 ounces. (4090 g). Her Apgar was 8 at one minute and 9 at 5 minutes. Her newborn assessment revealed a cephalohematoma on the right-posterior aspect of her head. All other assessment data is within normal limits. Sarah has breastfed once since birth for seven minutes. She is noted to be sleepy when at the breast and not an aggressive feeder, consistent with her gestational age. She has voided once since birth, but has not yet stoolled.

Sarah's mom Morgan was a diet-controlled gestational diabetic. Morgan's prenatal labs are as follows: Blood type is O +, GBS is negative, Hepatitis B is negative. Her prenatal course was unremarkable other than the premature rupture of membranes.

Sarah's blood type is A+. Blood sugars were obtained per protocol starting at two hours after birth and have been consistently > 50 mg/dL. Her hematocrit was tested per protocol of a baby of a diabetic mother born before 37 weeks and was 48% four hours after birth. Twelve hours after birth, her transcutaneous bilirubin level is 6.1 mg/dL.

Personal/Social History:

Morgan Daniels is a 22-year-old single mom who attends a local community college. The father of the baby is not involved. Morgan lives with her parents, who are supportive and available.

What data from the histories are RELEVANT and must be interpreted as clinically significant by the nurse?

Reduction o Risk
Potential

RELEVANT Data from Present Problem:	Clinical Significance:
<ul style="list-style-type: none"> - Prolonged labor - Premature rupture of membranes - LGA baby - One attempt to breastfeed - Gestational diabetes - The newborn has urinated but not passed stool - Bilirubin level is 6.1 mg/dL 	<ul style="list-style-type: none"> - Prolonged labor puts the baby and mom at risk for postpartum hemorrhage and other complications - PROM causes the baby to be born sooner than expected, luckily the baby in this case was at least 36 weeks gestation and was big enough - LGA babies prolong the delivery time and can experience birth traumas - The newborn needs to be feeding more than one time for 7 minutes, the newborn should be breastfed every 2 - 3 hours - Gestational diabetes can cause the newborn to experience hypoglycemia when born, continuous heel stick monitoring needs to be performed - The newborn is expected to stool within the first 24 - 48 hours of birth - The normal bilirubin level is < 5 mg/dL, this indicates that the newborn may appear jaundice which causes other potential complications
RELEVANT Data from Social History : <ul style="list-style-type: none"> - Single mom - Supportive parents - Attending school 	Clinical Significance: <ul style="list-style-type: none"> - Single mothers are under a lot of pressure to care for a newborn all by themselves, she will need a good support system - Supportive parents are what she needs to be successful, this will help her psychosocially

	- Attending school adds another risk factor for stress while providing care to a newborn
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Patient Care Begins:

Current VS:	NIPS Pain Assessment:
T: 98.3 F/36.8 C (axillary)	Facial Expression: Relaxed
P: 138 (regular)	Cry: No cry
R: 54 (regular)	Breathing Pattern: Relaxed
	Legs: Relaxed
	State of Arousal: Sleeping
	NIPS Score: 0

What VS data are RELEVANT and must be interpreted as clinically significant by the nurse?

Reduction o Risk Potential/Health Promotion and Maintenance

RELEVANT VS Data:	Clinical Significance:
<ul style="list-style-type: none"> - Temperature: 36.8 C - Pulse: 138 - Respiratory Rate: 54 - NIPS score: 0 	<ul style="list-style-type: none"> - This is a normal finding within 36.5 - 37.4 C - This is a normal finding within 70 - 190 BPM - This is a normal finding within 40 - 60 respirations per minute - This NIPS score indicates the infant is in no pain
Current Assessment:	
GENERAL APPEARANCE:	Calm, body flexed, no grimacing, appears to be resting comfortably
RESP:	Breath sounds clear, nonlabored respiratory effort. No grunting, retraction, or nasal flaring noted
CARDIAC:	Heart sounds regular with no abnormal beats, S1 S2, brisk cap refill, no edema. Moderate systolic murmur resent over a ex.
NEURO:	Sleeping • difficult to wake for feedings does not stay awake at breast. All reflexes intact
INTEG:	Facial jaundice noted, skin color pink with acrocyanosis. Cephalohematoma to right-posterior aspect of head. Swelling does not cross sutures lines.
RELEVANT Assessment Data:	Clinical Significance:
<ul style="list-style-type: none"> - Resting comfortable, no grimacing - Clear breath sounds, nonlabored respiratory effort - Regular heart sounds with no abnormal beats - Difficult to wake for feedings and does not stay awake at breast 	<ul style="list-style-type: none"> - The infant appears to be in no pain - The infant is having no troubles breathing and ABCs are in good shape - The heart is beating normally - The newborn should not be difficult to wake for feedings, this is an abnormal finding, the infant isn't getting enough nutrition

- Facial jaundice	
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Lab Results:

	Current:	Hi h/Low/WNL?
Bilirubin (< 5mg/dL)	6.4	High
Hgb (15-24 dL)	18	WNL
Hct (45-65%)	60	WNL
Glucose (40-60m dL)	55	WNL

What lab results are RELEVANT and must be interpreted as clinically significant by the nurse?

RELEVANT Lab(s):	Clinical Significance:	TREND: 1m rove/Worsening /Stable:
- Bilirubin: 6.4	- This is a high bilirubin value meaning the newborn has a faster production and destruction of RBCs in the body, this can cause listlessness, difficulty waking, high-pitched crying, poor sucking or feeding, and fevers	- Worsening, will continue to monitor

Part 11: Put it All Together to THINK Like a Nurse!

1. After interpreting relevant clinical data, what is the primary problem?

Problem:	Pathophysiology in OWN Words:
- Hyperbilirubinemia (high bilirubin levels at birth)	- Bilirubin is produced from the breakdown of hemoglobin. Bilirubin binds to albumin in the blood for transport to the liver, where it is taken up by hepatocytes and conjugated with glucuronic acid by enzymes. This is excreted in bile into the duodenum. Neonates have less bacteria in their digestive tracts so less bilirubin is excreted. Meaning, the bilirubin is put back into circulation causing the neonate to appear jaundice.

Collaborative Care: Medical Management

2. State the rationale and expected outcomes or the medical plan of care. (Pharm. and Parenteral Therapies)

Medical Management:	Rationale:	Expected Outcome:
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<p>Obtain parental consent.</p> <p>Check body temp hourly.</p> <p>Place eyemask over Sarah's eyes.</p> <p>Remove all clothing except for her diaper.</p> <p>Place Sarah on the Bilibed and under the bili lights.</p> <p>Accurate and strict I and O</p> <p>Repeat serum bilirubin level in 6 hours after phototherapy is initiated.</p>	<ul style="list-style-type: none"> - Parental consent must be given before any medical interventions are provided to the infant - Hourly temperatures are needed because hyperbilirubinemia can cause a fever in neonates - The bili-lights that help treat jaundice have high UV lights that could damage the neonate's eyes - The bili-lights require the neonate to be only in a diaper to destroy the bilirubin throughout the neonate, direct visualization of the skin is needed - The bili lights will help destroy the excess bilirubin levels in the bodies system - Strict intake and output will assess the neonates nutritional supply and demand - Repeating serum levels will ensure that the therapy/interventions are working 	<ul style="list-style-type: none"> - Parental consent will be given - No fever will occur and if it does, it will be caught early - The newborn will not have eye damage - The jaundice appearance will go away or be less - The bilirubin levels will decrease - An increase in feeding - A decrease in bilirubin levels
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Collaborative Care: Nursing

3. What nursing priorities will guide our plan of care? (Management of Care)

<p>Nursing PRIORITY:</p>	<p>Reducing and maintaining newborn bilirubin levels to get on track for proper nutrition and feedings</p>	
<p>PRIORITY Nursing Interventions:</p>	<p>Rationale:</p>	<p>Expected Outcome:</p>
<ul style="list-style-type: none"> - The nurse will assess the skin for yellow tone - The nurse will put the baby in phototherapy in just a diaper with protective eye wear - Nurse will monitor serum bilirubin levels - Assess the baby when breastfeeding and assist the mother 	<ul style="list-style-type: none"> - To monitor for worsening/bettering of the condition - To decrease the bilirubin levels, we use phototherapy this way - To monitor for improvement/worsening - To make sure the baby gets adequate nutrition due to poor feeding, assist the mother to help her and the neonate 	<ul style="list-style-type: none"> - The neonate will have normal pink skin - Baby bilirubin levels will decrease - Baby will get adequate nutrition

4. What psychosocial/holistic care PRIORITIES need to be addressed for this patient?

<p>Psychosocial PRIORITIES:</p>	<p>Speak with mom and ensure she has all the resources she needs, educate her on how to care for the newborns and what signs to look for</p>	
<p>PRIORITY Nursing Interventions:</p>	<p>Rationale:</p>	<p>Expected Outcome:</p>
<p>CARE/COMFORT: Ask the mother is there is anything she would like to talk about, ask how she is doing, and let the patient know that you are there for her</p> <p>Physical comfort measures: Provide her with pillows for comfort, Medications PRN</p>	<p>To ensure the best outcome for mom and baby by providing support, optimal care, optimal teaching, and keep mom happy after giving birth.</p>	<p>The patient will feel cared for and important, and will communicate any concerns she has with the proper resources</p>
<p>EMOTIONAL (How to develop a therapeutic relationship): Through rapport, trust, genuine care, respect, and empathy emotional and therapeutic relationships will form</p>	<p>Building a strong, healthy relationship and rapport with the mom can gain her trust and confidence in the nurse. We show her respect by letting her decide any options on her own and supporting them without judgement. Empathy shows kindness and genuine care.</p>	<p>The mother will be honest with the nurses and ask questions and express concerns.</p>
<p>SPIRITUAL: Address the mother's faith and beliefs</p>	<p>As the nurse, the patient's spiritual beliefs are important in the plan of care. By incorporating the patients beliefs and wishes, this will provide optimal care to the patient.</p>	<p>The nurse will take the patients spiritual beliefs into consideration.</p>

5. What educational/discharge priorities need to be addressed to promote health and wellness for this patient and/or family? (Health Promotion and Maintenance)

Teaching on newborn care, what signs to look for infections, breastfeeding teaching, warning signs to call the provider, how to change a diaper, how often the baby should be bathed, and provide resources on breastfeeding care and how of the neonate should feed.