

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:

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

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 of Risk Potential

RELEVANT Data from Present Problem:	Clinical Significance:
-Born at 36 weeks due to PROM -22 hour vaginal delivery -4090 g (LGA) -Right posterior cephalohematoma -Void x1, no bowel movement yet -Breast fed once in 6 hours -Mom is diet controlled gestational diabetic -Bili a little high (RR: 2-6 for <24hrs)	-Premature, with premature rupture of membranes=increased risk of infection -Sounds like difficult delivery being 22 hours long and child has cephalohematoma -Still awaiting BM -Infant should be feeding every 3-4 hours -Blood sugar poc and LGA because of moms gestational diabetes -Bili just barely above reference range
RELEVANT Data from Social History :	Clinical Significance:
Young mother Attends college Father not in picture but parents available	Mother may have financial difficulties, or need child care help

Patient Care Begins:

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

Reduction of Risk Potential/Health Promotion and Maintenance

RELEVANT VS Data:	Clinical Significance:
All vitals in range, respiration rate a bit high though, no pain	Infant seems to be adjusting okay to extrauterine life
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 rescent 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:
Moderate systolic murmur present	-Systolic murmurs at this age can be benign, but should be investigated further for structural defects
Difficult to wake for feeding	-Help mother with feeding, assess for poor feeding reasons
Jaundice noted prior to 24 hrs	-Pathological jaundice is before 24 hrs old, infant only 6 hours old
Cephalohematoma right posterior, no suture line crossing	-Monitor cephalohematoma

Lab Results:

	Current:	Hi h/Low/WNL?
Bilirubin (m 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: Improve/Worsening /Stable:
Bili is high 6.4	For infant less than 24 hrs old jaundice is pathologic, and is seen with high Bili and yellowed skin	Worsening, bili was 6.1 now its 6.4

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

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

Management of Care/Physiologic Adaptation

Problem:	Pathophysiology in OWN Words:
Jaundice (Pathologic)	Bilirubin is the final product of heme degradation. Bilirubin starts as insoluble and requires protein binding with albumin in the liver, to be excreted as bile. A newborn's liver is not yet fully functional and may lead to the buildup of bilirubin in the blood causing the yellowing of the skin. If not treated and too much builds up the infants neurologic health may be affected which can be detrimental.

Collaborative Care: Medical Management

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

Medical Management:	Rationale:	Expected Outcome:

Obtain parental consent.	-Prior to any medical procedure	-Parents sign consent
Check body temp hourly.	-Signs of acute bilirubin encephalopathy in jaundice include fever	-No fever
Place eye mask over Sarah's eyes.	-Protect eye infants like dim light	-Eye mask protects infant eyes
Remove all clothing except for her diaper.	-Maximum skin exposure to light	-Lights work for high bili levels
Place Sarah on the Bilibed and under the bili lights.	-A specific wavelength of light can break down bili into a form the body can get rid of through stool and urine	-Infant increases eating due to jaundice treatment
Accurate and strict I and O	-Infant has not been eating well most likely due to jaundice and high bili level	-Bili levels will decrease
Repeat serum bilirubin level in 6 hours after phototherapy is initiated.	-See if treatment is working or if jaundice is more severe	

Collaborative Care: Nursing

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

Nursing PRIORITY:		
PRIORITY Nursing Interventions:	Rationale:	Expected Outcome:
-Infants vitals -Infants blood sugar -Bili levels -Keep under bili light	-Monitor for worsening condition -Infant hasn't been eating well so blood sugar important, need sugar for the brain -Bili should go down with lights -If kept under light condition should improve	-Vitals stay normal -Blood sugar stays in range, infant eats better -Bili decreases -Infant kept under light

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

Psychosocial Integrity [Basic Care and Comfort]		
Psychosocial PRIORITIES :		
PRIORITY Nursing Interventions:	Rationale:	Expected Outcome:
CARE/COMFORT: Keep infant warm while under bili lights Physical comfort measures	-Maintain infants warmth because they must be unwrapped under the bili lights	-Infant stays warm
EMOTIONAL (How to develop a therapeutic relationship): Assess how the mother is feeling regarding breastfeeding	-If problems with breastfeeding offer help or guide to breastfeeding specialist	-Infant stays hydrated with good nutrition, mom is less stressed
SPIRITUAL: Ask about spiritual or cultural needs	-Helps nurse understand patient and family better	-Patient appreciates individualized care

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

- a Feeding prevents dehydration and speeds up jaundice treatment by flushing bili from body, feed every 3-4 hours, continue using light therapy, levels should be rechecked in 2-3 days, if having trouble breastfeeding contact breastfeeding specialist.