

Please read the following case and complete the questions and diagrams.

Setting:

- Tuesday, October 19, 0720 hours
- Community hospital, averages 900 births/year
- Professionals when case presents: 1 family physician who does obstetrics and 2 RNs who work in the birthing unit. A general surgeon and GP anesthetist are available on-call.
- The average response time for arrival of on site support from the tertiary care centre is 6 hours.

Case:

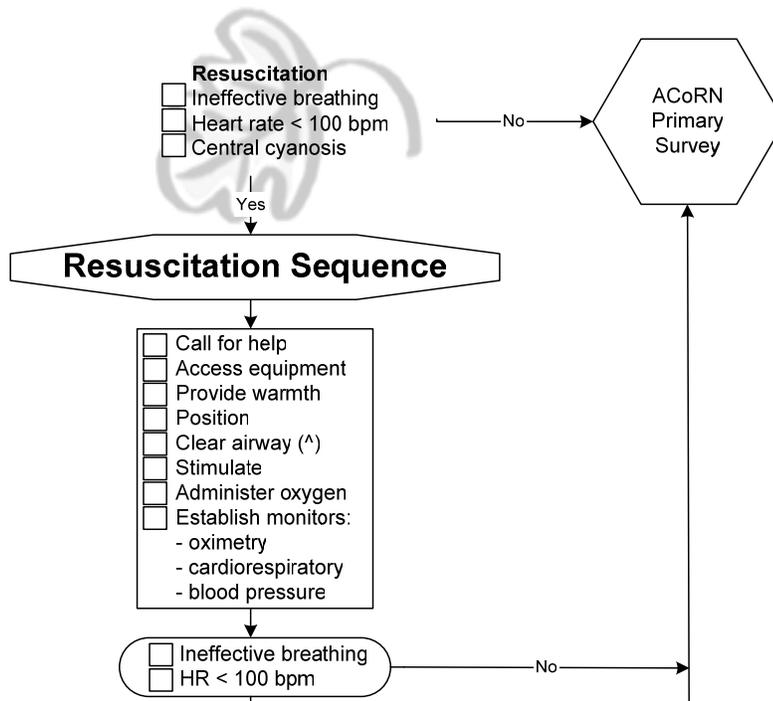
A 25 year old primipara had given birth to a term baby at 2300 hours the previous night, and roomed in with her 3000 g baby girl. The nurse introduces herself and performs her early morning assessment. The mother indicates her baby has been breastfeeding well overnight.

The nurse notes the baby is not as pink as the baby she assessed next door a few minutes earlier. She determines that breathing is regular, appears easy, and is 55 per minute. The breath sounds are clear. The heart rate is 140 bpm. The baby's behaviour is normal and there are no abnormal movements. A rapid physical examination under the examination light reveals the baby has an overall dusky hue, but no other problems.

2. Should you enter the resuscitation sequence? Yes No

Why? _____

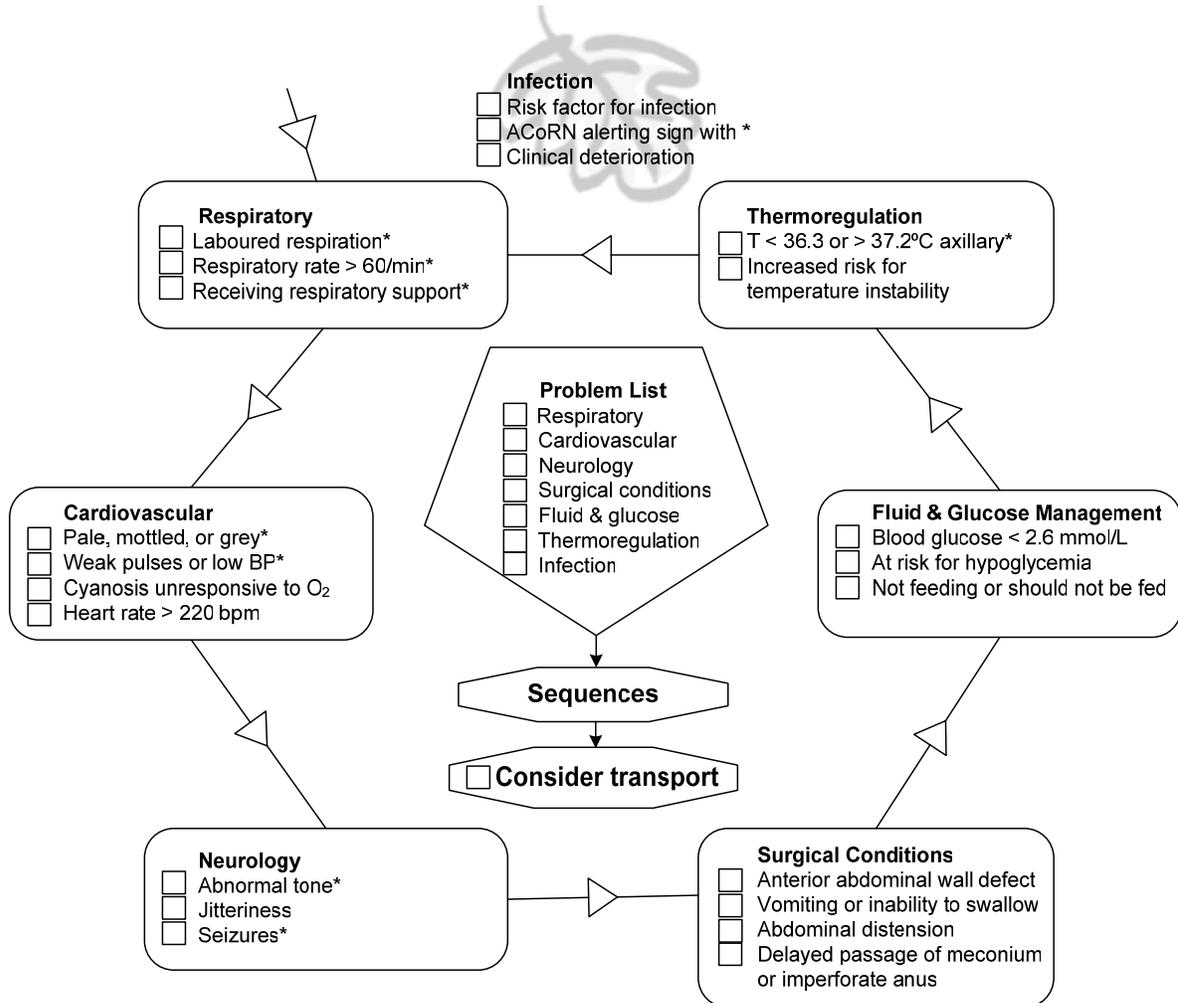
3. Trace the baby's pathway, marking the appropriate boxes.



The baby is now on a radiant warmer, positioned supine with her limbs contained by a nest, and is having monitors placed.

The pulse oximeter indicates the SpO₂ is 75% with oxygen administered by face-mask. The blood pressure is 58/30 with mean 45 mmHg.

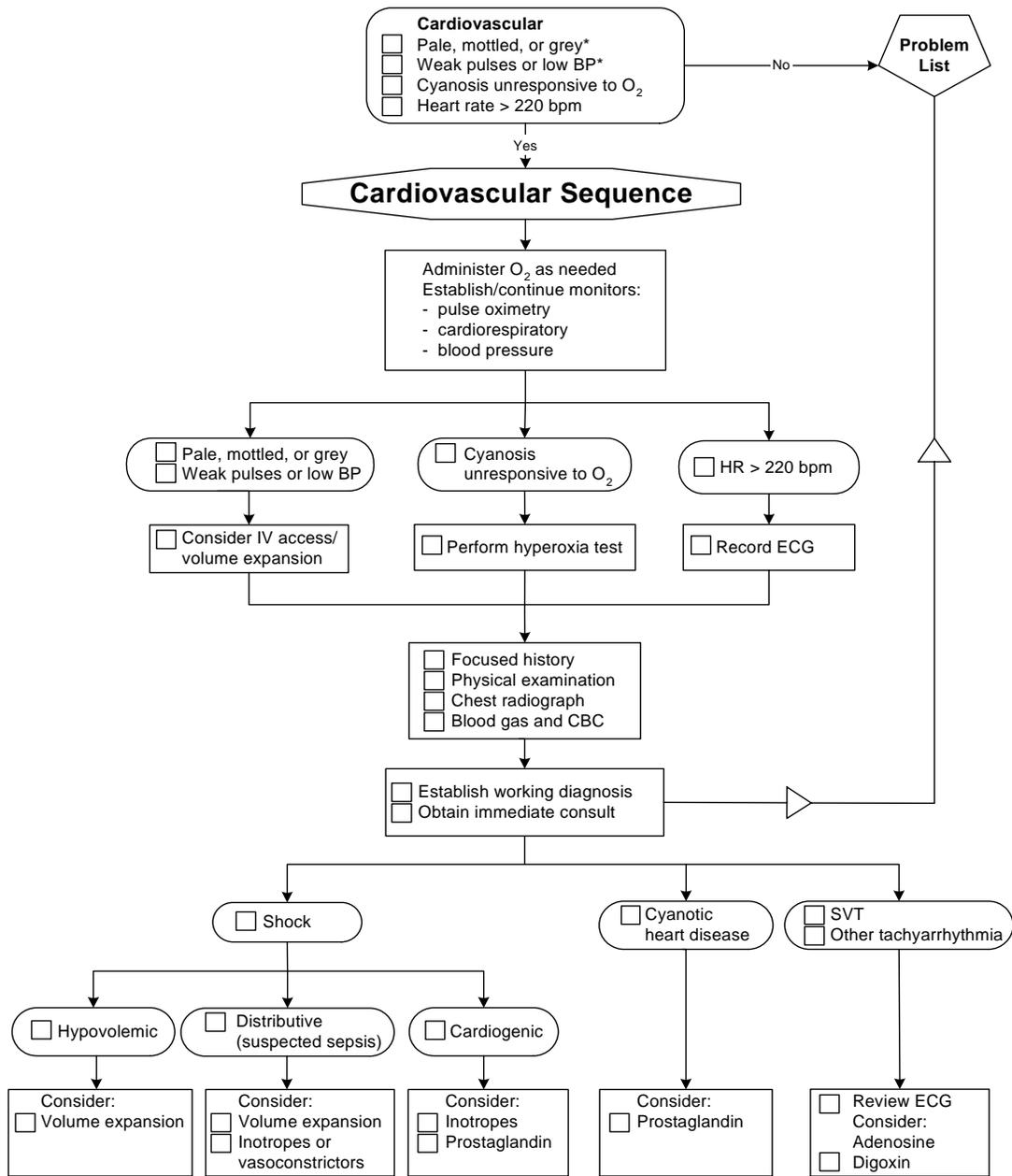
4. Complete the Primary Survey and Problem List:



5. Which sequence do you enter first?

6. Cyanosis is not an alerting sign of the Respiratory Sequence. How does a baby with cyanosis enter the Respiratory Sequence?

7. Trace the baby's pathway, marking the appropriate boxes.



You need to perform a hyperoxia test. You know the face mask can only administer a maximum of 40 to 50% oxygen.

8. How could you increase the oxygen concentration administered to this baby?

9. What response to the hyperoxia test are you looking for?

You learn from the mother that there were no concerns with her pregnancy or labor. Fetal movements were normal. She went into normal spontaneous labor. You review the hospital chart and determine there were no fetal monitoring concerns during labor; Apgars were 8¹ and 9⁵.

The baby remains alert, active, and has normal tone. Colour is cyanotic in the trunk and extremities despite administration of 100% oxygen. Her limbs are warm; capillary refill time is 3 seconds. Brachial and femoral pulses are palpable and seem normal.

10. Complete the table for clinical assessment of circulation. After noting what is normal for any baby, note what is abnormal for this baby.

Observation	Normal findings	Abnormal findings
LOC, activity, tone		
Skin colour		
Temperature of peripheries		
Peripheral pulses		
Capillary refill		
Mean blood pressure		
Heart rate		

11. Assuming normal hemoglobin level and adequate cardiac output, how are various degrees of desaturation (hypoxemia) tolerated?

SpO ₂	Degree of desaturation	Tolerance
> 75%		
65 to 75%		
< 65%		

12. Which laboratory result below is most suggestive that tissue oxygenation is inadequate.

a. BD > 10

c. Hemoglobin < 100

b. pH < 7.25

d. Mean BP < 40 mmHg

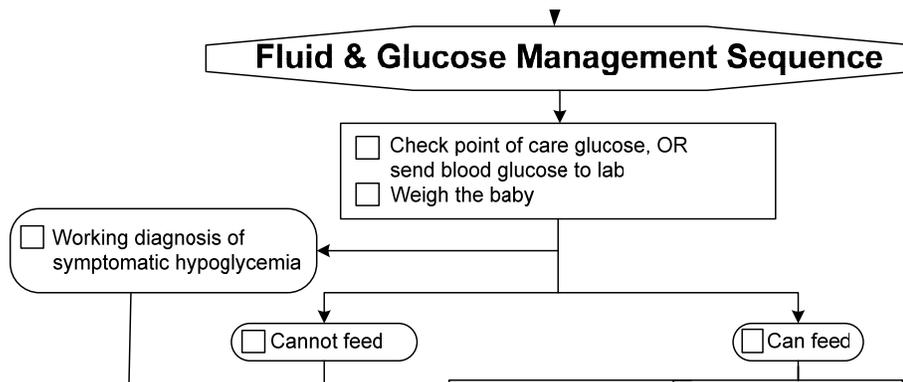
13. Why do you need to obtain an immediate consult for this baby?

Setting _____

Baby's condition _____

Resources _____

14. The Problem List indicates the next sequence to enter is Fluid and Glucose Management. Trace the baby's initial pathway, marking the appropriate boxes.

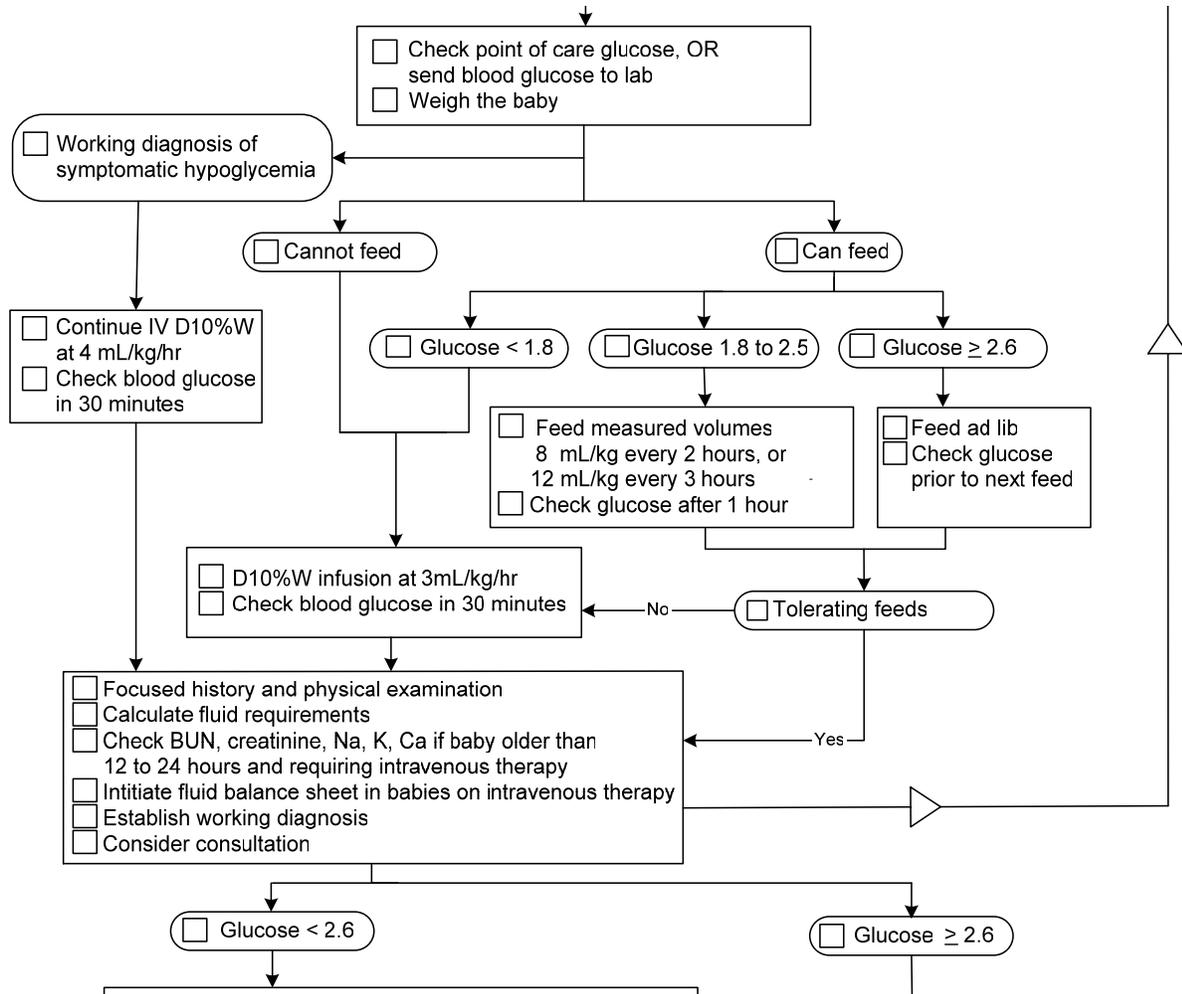


15. Would you continue feeding this baby at this time? Why or why not?

16. What core step still needs to be done?

The blood glucose is 3.0. The axilla temperature is 36.5.

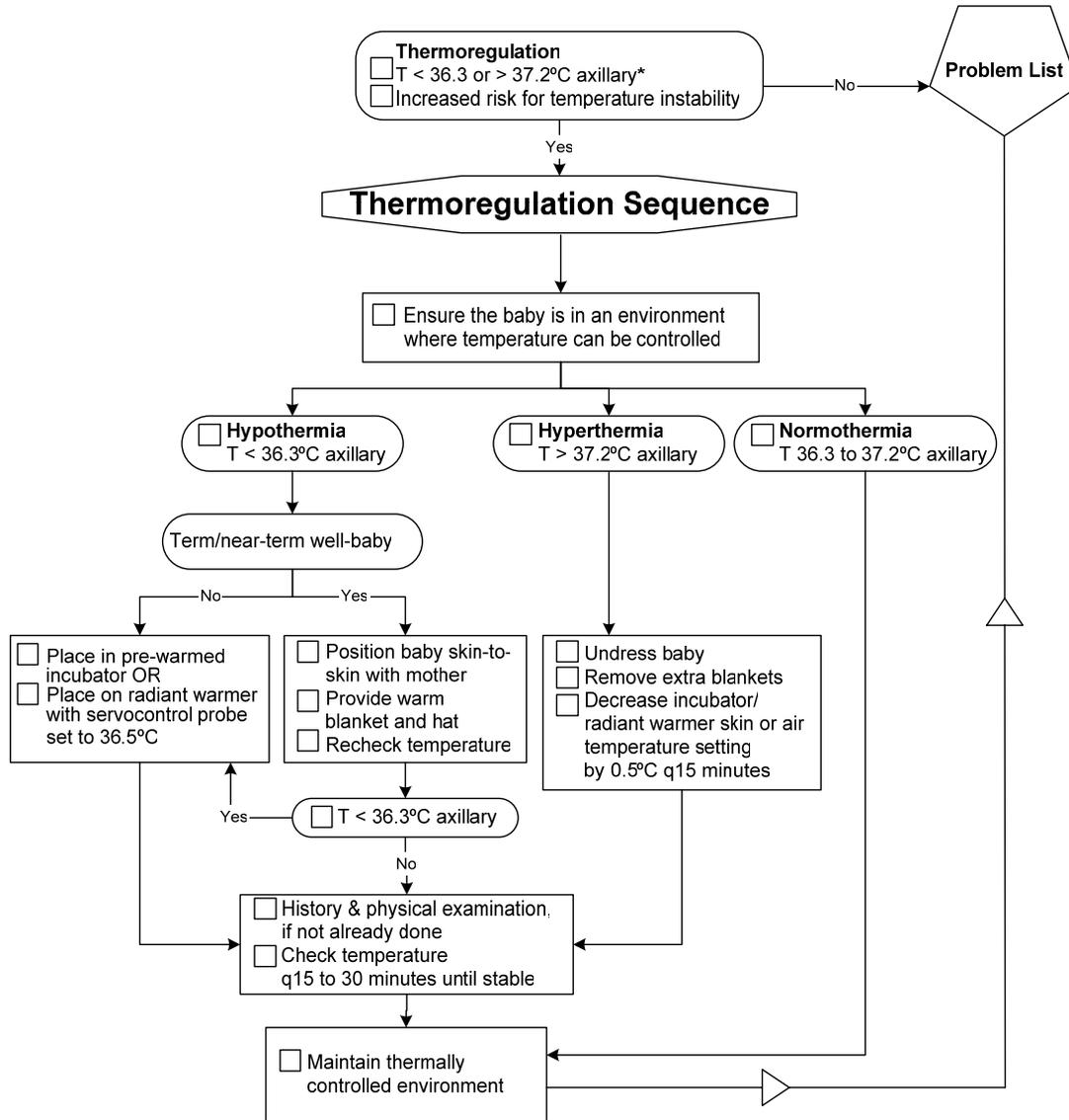
17. Continue tracing the baby's pathway in the Fluid and Glucose Management Sequence, marking the appropriate boxes.



18a. What rate do you set the IV infusion to?

18b. Do you need to repeat the blood glucose 30 minutes after initiating the IV infusion? Why or why not?

19. The Problem List indicates the next sequence to enter is Thermoregulation. Trace the baby's initial pathway, marking the appropriate boxes.



20. Why is this baby at risk for temperature instability?

21. What measures can you employ to prevent heat loss?

22. Does this baby need to enter the Infection Sequence? Why or why not?

The blood gas result returns: pH 7.38, CO₂ 40, O₂ 34 (capillary), BD 4.

23. What values are increased, normal or decreased on the blood gas result above?

pH: _____ Normal range: _____

PCO₂: _____ Normal range: _____

BD: _____ Normal range: _____

24. How would you interpret the acid base balance of this blood gas?

25. How would you interpret the pO₂ of this blood gas?

26. Is this blood gas satisfactory? Yes No

Why or why
not? _____

27. Why does metabolic acidosis require immediate action?

28. Comment on the chest x-ray result below:



Lung fields: _____
Diaphragm & heart borders: _____
Heart shape and size: _____
Air leaks: _____
Location of stomach bubble: _____
ETT tip: _____

29. What is your working diagnosis?

You have completed all appropriate sequences up to Next Steps. You now consider transport, and return to those Sequences needing completion of Specific Management.

30. Review your answer to question 8. What additional therapies do you need to consider in consultation with your referral center?

You repeat the Primary Survey regularly to follow the progress of the baby, and remain in telephone contact with the referral center. A decision is made to repeat blood gases to ensure early identification of developing metabolic acidosis. You request PGE₁ from the pharmacy as a STAT order. While the nurse prepares the infusion, you wait for guidance from the referral center regarding whether the infusion should or should not be administered.

31. What are the main side effects to consider when administering a PGE₁ infusion?

32. How would you prepare the PGE₁ infusion?

33. Can you think of ways to integrate support for the baby throughout care?

34. List ways to support the family who may be separated from their baby who is being transported to the tertiary centre.

The infant transport team arrives 6 hours later. The baby is transported without incident. Several hours later you receive a call from the receiving facility to update you regarding the baby's condition

