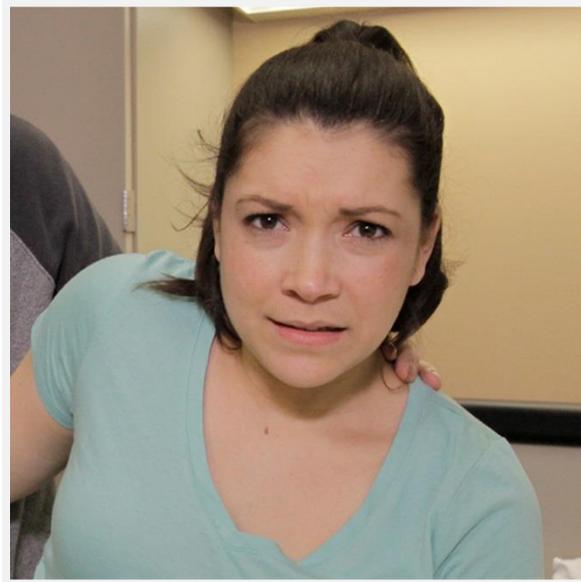


NEWBORN

Estimated Time: 40 minutes • Debriefing Time: 30 minutes



Scan to Begin



Mom's Name: Olivia Brooks

SCENARIO OVERVIEW

Olivia Brooks was induced at 41 6/7 weeks gestation. She labored for 23 hours and refused a fetal monitor. Baby Girls Brooks was delivered vaginally. She was limp with the cord around her neck and meconium was present. She requires immediate resuscitation and surfactant administration.

LEARNING OBJECTIVES

1. Demonstrate proper infection control
2. Perform a neonatal assessment/resuscitation per NRP guidelines
3. Recognize and respond to abnormal findings
4. Assist with neonatal procedures
5. Effectively communicate with the interprofessional team
6. Document accurately

CURRICULUM MAPPING

WTCS RESPIRATORY THERAPY PROGRAM OUTCOMES

- Apply respiratory therapy concepts to patient care situations
- Demonstrate technical proficiency required to fulfill the role of a respiratory therapist
- Practice respiratory therapy according to established professional and ethical standards

RESPIRATORY SURVEY

- Perform pulse oximetry
- Review the medical record utilizing medical record keeping and charting methods consistent with hospital policy and procedures
- Utilize infection control principles
- Evaluate patient data
- Perform a basic cardiovascular assessment
- Perform a respiratory assessment
- Obtain vital signs

RESPIRATORY THERAPEUTICS I

- Perform procedures to assess oxygenation

- Evaluate oxygenation
- Demonstrate the use of medical gas equipment
- Assess the need for medical gas therapy

RESPIRATORY PHARMACOLOGY

- Examine the pharmacodynamics of cardiac drugs, vasodilators, vasoconstrictors, and diuretics
- Examine the pharmacodynamics of surface active drugs

RESPIRATORY NEO/PEDS CARE

- Differentiate cardiopulmonary diseases/disorders of the neonatal/pediatric patient
- Evaluate cardiopulmonary status of the neonatal/pediatric patient
- Evaluate radiologic images of neck and chest
- Apply principles of mechanical ventilation and airway management for the neonatal/pediatric patient
- Treat cardiopulmonary collapse in the neonatal/pediatric patient

CLINICAL PRACTICE

- Apply standard precautions
- Assess vital signs
- Perform pulse oximetry
- Perform chart review
- Perform manual ventilation
- Perform mechanical ventilation of the neonate/pediatric patient

SIMULATION LEARNING ENVIRONMENT & SET-UP

ENVIRONMENT

Inside room: Baby on open-incubator/bed

Inside or outside room: Hand sanitizer and/or sink

Outside room: Computer or form(s) for documentation

PATIENT PROFILE

There is no patient profile as the baby was just born. Her name is Baby Girl Brooks.

EQUIPMENT/SUPPLIES/SETTINGS

Patient

- Moulaged to appear newly born with meconium present (meconium stained towels around the infant)
- No ID band
- Facilitator/Technician Note: For this scenario, you may choose not to use the Chest QR Codes as the breath sounds are of little value during the resuscitation. If they are used, diminished breath sounds are heard throughout the scenario.

Monitor Settings

- No monitor applied until directed by the Facilitator.
- Simulator vitals: None as baby is actively coding. When baby is resuscitated, simulator vitals are at the discretion of the Facilitator. Preductal Saturation = 60-65% at 1 minute, 65-70% at 2 minutes, 70-75% at 3 minutes, 75-80% at 4 minutes, should not go above 80% even at 5 minutes, but will increase to 95% after interventions and by 10-15 minute mark – discuss with facilitator.

Supplies

- General
 - Towels for drying/stimulating, bulb (and other) suction equipment, thermometer, neonatal ECG stickers
 - Neonatal Code Cart and supplies (Broselow tape)

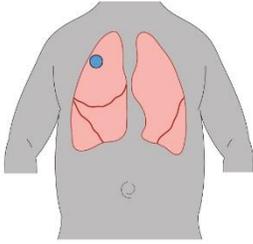
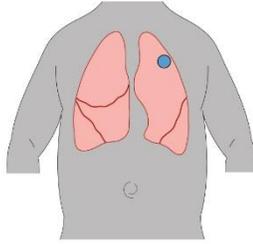
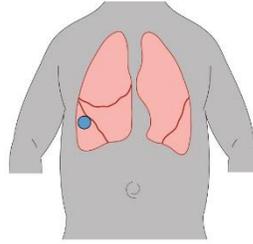
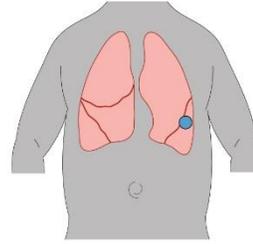
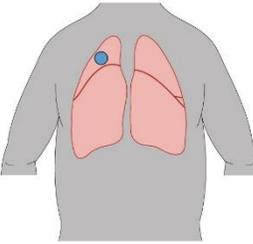
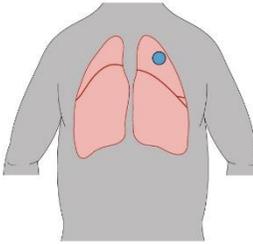
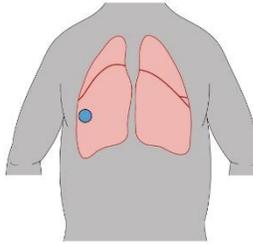
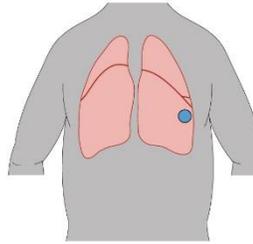
- Respiratory Equipment
 - Neonatal resuscitation bag and intubation supplies
 - Neonatal suction supplies
 - Neonatal pulse oximeter probe
 - Optional: 5 french end-hole catheter and neonatal suction valve for surfactant administration.
- Medications
 - Epinephrine injection – 1: 10000 (0.1 mg/ml)
 - Normal Saline IV bag – 1000 ml
 - Survanta intratracheal suspension – 4 ml (100 mg)
 - The correct dose is 4 ml (100 mg)/ kg birth weight
 - Baby Girl Brooks = 4.28 kg x 4 ml (100 mg) = 17.12 ml (428 mg)
 - 5 bottles are needed for the full dose.

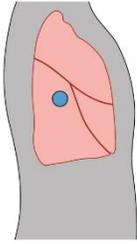
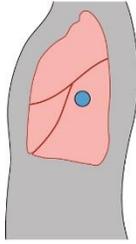
QR CODES

START 	MOM 	REPORT 	FACILITATOR 
DELIVERY 	EPINEPHRINE NEO 	NORMAL SALINE 	SURVANTA 

CHEST QR CODES

Cut along the dotted lines. Fold along the solid line to create a bi-fold of the diagram and QR code.

			
ANTERIOR 2	ANTERIOR 3	ANTERIOR 6	ANTERIOR 7
			
			
POSTERIOR 0	POSTERIOR 1	POSTERIOR 4	POSTERIOR 5
			

	
RIGHT AXILLARY 1	LEFT AXILLARY 1
	

TEACHING PLAN

PREBRIEF

The facilitator should lead this portion of the simulation. The following steps will guide you through Prebrief.

- Scan the **QR Code: “Scan to Begin”** while students are in Prebrief.
- “Meet the Mom” (on iPad) and explain how the iPad works in the simulated learning environment including:
 - Explain how to use the iPad scanner and QR codes. Remind students that there are multiple QR codes in the simulation, but they should only scan them if they think it will provide data necessary for their assessment and evaluation of the patient.
 - For some scenarios, it may be helpful to tell students where the QR code are located. For others, you may want students to “find” the QR codes during their assessments. This is your choice.
 - Describe how a QR code sound will work in the scenario. For the most authentic sound experience, student should use ear buds or the ARISE “stethoscope” for all QR codes with the following symbol: ◀. Example: **QR Code: Chest Anterior 1** ▶
 - As the facilitator, you should be aware that throughout the simulation some QR codes are necessary to the programming of the iPad content. Directions for which QR codes are required (to be scanned) in each state are listed under each state of the documentation below. The QR codes are also in **BOLD** type.
 - Level tab – This tab “tells” the content in the iPad to change to what is needed for the next state of a simulation. It is used a few times in this scenario after the provider is notified to display new orders (those just given over the phone) and lab results, etc.
 - Medication QR Codes – The student(s) must scan **QR Code: Patient ID** prior to scanning any medication. That scan is valid for 2 minutes and then it “times out.” The student(s) will need to scan **QR Code: Patient ID** again to give more medications.
 - MAR Hyperlinks – On the MAR all medications are underlined and hyperlinked to DailyMed, which is a medication reference housed by the

National Library of Medicine. Students can click on these links during the simulation for up-to-date medication content, labels, and package insert information.

- Discuss the simulation “Learning Objective(s)” (on iPad) as well as any other Prebrief materials
- View “Video” of a vaginal delivery
 - Possible Facilitator Questions
 - What did you notice during the delivery?
 - What will the Delivery Team do for the neonate at this time?
- Get “Report” on iPad
 - Possible Facilitator Questions
 - Discuss NRP guidelines.
 - How does a neonatal Code Blue differ from an adult Code Blue?
 - What is a Broselow tape and how is it used?
- View a plaque that reads, “Immediately proceed to the Code Blue.”
 - Possible Facilitator Questions
 - Discuss the duties and priorities of the respiratory therapist during a neonatal Code Blue.
 - Describe infection control and PPE requirements.
- Tabbed iPad Prompts and Content
 - There is no tabbed content at this time. Students should immediately proceed to the Code Blue that is already in process.

STATE 1

NEONATAL CODE BLUE

- Patient Overview
 - Students are to perform a neonatal resuscitation per NRP guidelines. They arrive to the delivery room to a neonatal Code Blue that is already in progress.
- Expected Student Behaviors
 - View a plaque on the iPad entitled “Code Blue” with text that reads, “Please use the following content as a reference during this code blue.”
 - There are two buttons on this plaque:
 - Tap the Report button to hear the overhead report again.
 - Tap the APGAR Protocol button to see the APGAR protocol. A printable version is also available in Appendix A.
 - Students will resuscitate the neonate along with the rest of the neonatal team. The progression and interventions that occur in the Code are at the discretion of the Facilitator and should follow NRP guidelines.
 - By the end of the resuscitation, the infant must be intubated with good cardiac activity. Students will “bag” the patient as a ventilator is not available. In addition, bagging is difficult and SpO₂ readings remain low.
 - Facilitator Note: At the end of the scenario, the iPad displays an image of Baby Girl Brooks nasally intubated and mechanically ventilated. For consistency, you may want to choose nasal intubation. Otherwise, you can use this as a discussion point – when oral vs. nasal intubation, pros and cons, etc.
 - Optional: Students can perform 5 minute APGAR score. See Appendix B for the State 2 iPad results so that information given to students matches what will be provided.
 - Optional: Scan **QR Code: Epinephrine Neo** or **QR Code: Normal Saline** to view labels of those medications during the resuscitation.

- Medication information from Dailymed can be found by tapping on the “View Medication Information” button located on the medication label that appears on the iPad after scanning a medication QR Code.
 - Effectively communicate with the interprofessional team
- Possible Facilitator Questions
 - Describe the NRP resuscitation protocol. When is positive pressure indicated? When are compressions started?
 - Describe the roles of the Team during a neonatal resuscitation.
 - Describe pre-ductal SpO₂ readings within the first 10 minutes of birth.
 - What procedures, labs, etc... are needed in a neonatal code? Why?
- Technician Prompts
 - Nothing required for the patient.
 - Several people should be playing the roles of the other members of the NRP team including a nurse and provider.
 - Optional: During this time, the team members could be obtaining blood, starting an IV line and inserting an umbilical line.
 - Possible Facilitator Questions:
 - What labs would be ordered for a neonate?
 - What are the indications, hazards, and/or contraindications for an umbilical line?
- Tabbed iPad Prompts and Content
 - Scan **QR Code: Facilitator** to advance to State 2
 - The iPad will display a message that reads, “You have been approved to proceed.”

HOME

As there is no Patient Profile yet (baby was just born), this screen is intentionally blank and a resting spot for the iPad.

APGAR PROTOCOL

A printable version is available in Appendix A.

APGAR

	Score of 0	Score of 1	Score of 2
Appearance (Skin Color)	blue or pale all over	blue at extremities; body pink (acrocyanosis)	no cyanosis; body and extremities pink
Pulse	absent	< 100 beats per minute	> 100 beats per minute
Grimace	no response to stimulation	grimace on suction or aggressive stimulation	cry on stimulation
Activity	none	some flexion	flexed arms and legs that resist extension
Respiratory Effort	absent	weak, irregular, gasping	strong, robust cry

Scores 7 and above = generally normal

Scores 4 to 6 = fairly low

Scores 3 and below = critically low

LEVEL 1

The iPad reads, “The iPad is at Level 1.”

SCANNER

Use this to scan available QR Codes.

EXIT

The iPad reads, “Are you sure you want to exit? All data will be lost.”

- If “No” is selected, the iPad will return to the tabbed content.

- If “Yes” is selected, the iPad will let the student(s) exit and prompt them to complete an embedded 3-5 minute survey.

STATE 2

SURFACTANT ADMINISTRATION

- Patient Overview
 - APGAR scores, labs, and a chest x-ray have resulted. Surfactant is ordered and students assist with the administration of Survanta while continuing to resuscitate per NRP guidelines.
- Expected Student Behaviors
 - View a plaque entitled “Diagnostic Results” with text that reads, “APGAR Scores, Labs and a Chest X-ray are available for review.”
 - Students should tap on the APGAR Scores, Labs-Diagnostics, and Imaging tabs to view and evaluate the results.
 - Facilitator Note: After ALL of the above tabs are tapped, the iPad advances to the next plaque.
 - Discuss the results of each and the treatment options.
 - View a plaque entitled, “Surfactant Administration” with an image of Survanta and text that reads, “Prepare for surfactant administration.”
 - Facilitator Note: To advance, scan **QR Code: Facilitator**.
 - Possible Facilitator Questions:
 - When is surfactant indicated? How could it help this patient?
 - How is surfactant administered?
 - When are the hazards and complications of surfactant?
 - After the Facilitator Code is scanned, view the Survanta Administration protocol. A printable version is available in Appendix C.
 - Students should assist with the procedure as outlined in the protocol. Scan **QR Code: Survanta** to view the medication label.
 - Facilitator Note: Once the Survanta is administered, scan **QR Code: Facilitator** to advance.
 - Possible Facilitator Questions:

- What other surfactant choices are there? Why choose one over another?
- Why does the infant need to be placed in different positions during the administration of the surfactant?
- What is the correct dose of Survanta for this patient?
- After the Facilitator Code is scanned, view a plaque entitled, “Mechanical Ventilation” with an image of the neonate intubated and on mechanical ventilation with text that reads, “Surfactant administration was successful. Baby was placed on conventional mechanical ventilation and is only requiring 25-30% O₂. Repeat chest x-ray is pending.”
 - Facilitator Note: The infant is nasally intubated in the image.
 - Optional: Students could place the patient on mechanical ventilation as directed by the Facilitator.
 - Possible Facilitator Questions:
 - When is a second dose of Survanta indicated and why?
 - What ventilator settings would be appropriate for this patient and why?
 - When would we consider weaning this patient and why?
 - What are the possible outcomes for this patient and why?
- Document accurately
- Technician Prompts
 - Nothing required for the patient.
 - Several people should be playing the roles of the other members of the NRP team including a nurse and provider.
- Tabbed iPad Prompts and Content
 - When continue is tapped on the “Mechanical Ventilation” plaque, view a message that reads, “You have been approved to Proceed. You have completed the learning objectives for this scenario and may exit.

APGAR SCORES

A printable version is also available in Appendix B.

Patient Name	DOB	MR#
<i>Baby Brooks</i>	<i>Now</i>	<i>105115</i>
Allergies	Height (cm)	Admission Weight (kg)
<i>NKDA</i>		

APGAR Scores

5 Minute APGAR		Score = 5
Score of 0	Score of 1	Score of 2
blue or pale all over	blue at extremities; body pink (acrocyanosis)	no cyanosis; body and extremities pink
absent	< 100 beats per minute	> 100 beats per minute
no response to stimulation	grimace on suction or aggressive stimulation	cry on stimulation
none	some flexion	flexed arms and legs that resist extension
absent	weak, irregular, gasping	strong, robust cry

1 Minute APGAR		Score = 1
Score of 0	Score of 1	Score of 2
blue or pale all over	blue at extremities; body pink (acrocyanosis)	no cyanosis; body and extremities pink
absent	< 100 beats per minute	> 100 beats per minute
no response to stimulation	grimace on suction or aggressive stimulation	cry on stimulation
none	some flexion	flexed arms and legs that resist extension
absent	weak, irregular, gasping	strong, robust cry

LABS-DIAGNOSTICS

Patient Name	DOB	MR#
<i>Baby Girl Brooks</i>	<i>Today</i>	<i>105115</i>
Allergies	Height (cm)	Admission Weight (kg)
<i>NKDA</i>	<i>57.15</i>	<i>4.28</i>

Laboratory Results

CBC				
	10 minutes after birth	[time]	Units	Reference Range
WBC	31.2		x10 ³ uL	9.0-30.0
RBC	5.2		x10 ⁶ uL	3.9-5.9
Hgb	15.2		g/dL	13.4-19.9
HCT	56		%	42-65
MCV	102		fL	88-123
Platelet	262		x10 ⁹ uL	150-350

Electrolytes				
	10 minutes after birth	[time]	Units	*** Cord Blood Reference Ranges ***
Glucose	31		mg/dL	29-120
Sodium	128		mEq/L	129-144
Potassium	3.9		mEq/L	3.4-9.9
Calcium	2.2		mmol/L	2.1-2.8
Chloride	16		mEq/L	15-20

Arterial Blood Gas (ABG)				
	10 minutes after birth	[time]	Units	*** UA Reference Ranges ***
pH	6.98			7.15-7.38

SIMULATION

PaCO ₂	71		mmHg	32-68
PaO ₂	4		mmHg	6-31
HCO ₃	13.2		mEq/L	15.4-26.8
Base Excess	-11.3		mEq/L	-8.1-0.9

Blood Culture

	10 minutes after birth	[time]	Units	Reference Range
Bacterial Growth	pending			No Growth

IMAGING



APGAR PROTOCOL/PROTOCOLS

After the Survanta protocol is viewed on the iPad, this tab changes from “APGAR Protocol” to “Protocols” and includes both the APGAR and Survanta protocols for student reference.

LEVEL 2/EXIT

- When the Level 2 tab is tapped, the iPad reads, “The iPad is at Level 2.”
- The Level 2 tab will automatically disappear after **QR Code: Facilitator** is scanned.
- When the Exit tab is tapped the iPad reads, “Scenario objectives have been met. Are you sure you want to exit the game?”
 - If “No” is selected, the iPad will return to the tabbed content.
 - If “Yes” is selected, the iPad will let the student(s) exit and prompt them to complete an embedded 3-5 minute survey.

DEBRIEF

Nothing needed from the iPad.

QUESTIONS

1. How did you feel this scenario went?
2. What were the main issues you had to deal with when caring for Baby Brooks?
3. Review understanding of learning objective: Demonstrate proper infection control.
 - a. What infection control issues did you encounter?
 - b. What is your role in assuring infection control procedures are followed during a resuscitation?
 - c. What infectious concerns do you have for Baby Brooks?
4. Review understanding of learning objective: Perform a neonatal assessment/resuscitation per NRP guidelines.
 - a. What, if any, challenges did you encounter during your assessments of Baby Brooks?
 - b. How do vitals differ in the newborn population?
 - c. How does the infant's oxygenation status change after birth?
 - d. What medications were administered during the resuscitation? Why?
 - e. If you could "do over," what would you change about this neonatal resuscitation?
5. Review understanding of learning objective: Recognize and respond to abnormal findings.
 - a. Explain the APGAR scores, Labs, and Imaging results. Are they what you expected? Why or Why not?
 - b. Are there any other labs/tests/procedures that would be useful in determining the status of Baby Girl Brooks? Why?
6. Review understanding of learning objective: Assist with neonatal procedures.
 - a. How did you assist with the administration of the surfactant?
 - b. If you could "do over," what would you change about the administration of the Survanta?

7. Review understanding of learning objective: Effectively communicate with interprofessional team.
 - a. Were the communication techniques you used with the Neonatal Code team effective? Why or Why not?
 - b. If you could “do over,” how would you change your communication with the Neonatal Code team?
8. Review understanding of learning objective: Document accurately.
 - a. What is important to document in your assessments and interventions?
9. Summary/Take Away Points
 - a. “Today you cared for a newborn patient who needed resuscitation and surfactant administration following a vaginal delivery with meconium at 41 6/7 weeks. What is one thing you learned from participating in this scenario that you will take with you into your respiratory therapy practice?” (Each student must share something different from what the others’ share.)

Note: Debriefing technique is based on INASCL Standard for Debriefing and NLN Theory Based Debriefing by Dreifuerst.

SURVEY

Print this page and provide to students.

Students, please complete a brief (2-3 minute) survey regarding your experience with this ARISE simulation. There are two options:

1. Use QR Code: Survey
 - a. Note: You will need to download a QR Code reader/scanner onto your own device (smartphone or tablet). There are multiple free scanner apps available for both Android and Apple devices from the app store.
 - b. This QR Code will not work in the ARIS app.



2. Copy and paste the following survey link into your browser.
 - a. https://ircvtc.co1.qualtrics.com/SE/?SID=SV_6Mwfv98ShBfRnBX

APPENDIX A

APGAR

	Score of 0	Score of 1	Score of 2
Appearance (Skin Color)	blue or pale all over	blue at extremities; body pink (acrocyanosis)	no cyanosis; body and extremities pink
Pulse	absent	< 100 beats per minute	> 100 beats per minute
Grimace	no response to stimulation	grimace on suction or aggressive stimulation	cry on stimulation
Activity	none	some flexion	flexed arms and legs that resist extension
Respiratory Effort	absent	weak, irregular, gaspings	strong, robust cry

Scores 7 and above = generally normal

Scores 4 to 6 = fairly low

Scores 3 and below = critically low

Adapted from: Wikipedia, Apgar score

APPENDIX B

Patient Name	DOB	MR#
<i>Baby Brooks</i>	<i>Now</i>	<i>105115</i>
Allergies	Height (cm)	Admission Weight (kg)
<i>NKDA</i>		

APGAR Scores

5 Minute APGAR		Score = 5
Score of 0	Score of 1	Score of 2
blue or pale all over	blue at extremities; body pink (acrocyanosis)	no cyanosis; body and extremities pink
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no response to stimulation	grimace on suction or aggressive stimulation	cry on stimulation
none	some flexion	flexed arms and legs that resist extension
absent	weak, irregular, gasping	strong, robust cry

1 Minute APGAR		Score = 1
Score of 0	Score of 1	Score of 2
blue or pale all over	blue at extremities; body pink (acrocyanosis)	no cyanosis; body and extremities pink
absent	< 100 beats per minute	> 100 beats per minute
no response to stimulation	grimace on suction or aggressive stimulation	cry on stimulation
none	some flexion	flexed arms and legs that resist extension
absent	weak, irregular, gasping	strong, robust cry

APPENDIX C

SURVANTA ADMINISTRATION

Each dose of SURVANTA is 100 mg/kg birth weight (4 mL/kg). The SURVANTA Dosing Chart shows the total dosage for a range of birth weights.

SURVANTA DOSING CHART			
Weight (grams)	Total Dose (mL)	Weight (grams)	Total Dose (mL)
600-650	2.6	1301-1350	5.4
651-700	2.8	1351-1400	5.6
701-750	3.0	1401-1450	5.8
751-800	3.2	1451-1500	6.0
801-850	3.4	1501-1550	6.2
851-900	3.6	1551-1600	6.4
901-950	3.8	1601-1650	6.6
951-1000	4.0	1651-1700	6.8
1001-1050	4.2	1701-1750	7.0
1051-1100	4.4	1751-1800	7.2
1101-1150	4.6	1801-1850	7.4
1151-1200	4.8	1851-1900	7.6
1201-1250	5.0	1901-1950	7.8
1251-1300	5.2	1951-2000	8.0

Four doses of SURVANTA can be administered in the first 48 hours of life. Doses should be given no more frequently than every 6 hours.

GENERAL

SURVANTA is administered intratracheally by instillation through a 5 French end-hole catheter. The catheter can be inserted into the infant's endotracheal tube without interrupting ventilation by passing the catheter through a neonatal suction valve attached to the endotracheal tube. Alternatively, SURVANTA can be instilled through the catheter by briefly disconnecting the endotracheal tube from the ventilator.

The neonatal suction valve used for administering SURVANTA should be a type that allows entry of the catheter into the endotracheal tube without interrupting ventilation and also maintains a closed airway circuit system by sealing the valve around the catheter.

If the neonatal suction valve is used, the catheter should be rigid enough to pass easily into the endotracheal tube. A very soft and pliable catheter may twist or curl within the neonatal suction valve. The length of the catheter should be shortened so that the tip of the catheter protrudes just beyond the end of the endotracheal tube above the infant's carina. SURVANTA should not be instilled into a mainstem bronchus.

To ensure homogenous distribution of SURVANTA throughout the lungs, each dose is divided into four quarter-doses.

Each quarter-dose is administered with the infant in a different position. The recommended positions are:

Head and body inclined 5-10° down, head turned to the right

Head and body inclined 5-10° down, head turned to the left

Head and body inclined 5-10° up, head turned to the right

Head and body inclined 5-10° up, head turned to the left

The dosing procedure is facilitated if one person administers the dose while another person positions and monitors the infant.

FIRST DOSE

Determine the total dose of SURVANTA from the SURVANTA dosing chart based on the infant's birth weight. Slowly withdraw the entire contents of the vial into a plastic syringe through a large-gauge needle (eg, at least 20 gauge). Do not filter SURVANTA and avoid shaking.

Attach the premeasured 5 French end-hole catheter to the syringe. Fill the catheter with SURVANTA. Discard excess SURVANTA through the catheter so that only the total dose to be given remains in the syringe.

Before administering SURVANTA, assure proper placement and patency of the endotracheal tube. At the discretion of the clinician, the endotracheal tube may be suctioned before

administering SURVANTA. The infant should be allowed to stabilize before proceeding with dosing.

In the prevention strategy, weigh, intubate and stabilize the infant. Administer the dose as soon as possible after birth, preferably within 15 minutes. Position the infant appropriately and gently inject the first quarter-dose through the catheter over 2-3 seconds.

After administration of the first quarter-dose, remove the catheter from the endotracheal tube. Manually ventilate with a hand-bag with sufficient oxygen to prevent cyanosis, at a rate of 60 breaths/minute, and sufficient positive pressure to provide adequate air exchange and chest wall excursion.

In the rescue strategy, the first dose should be given as soon as possible after the infant is placed on a ventilator for management of RDS. In the clinical trials, immediately before instilling the first quarter-dose, the infant's ventilator settings were changed to rate 60/minute, inspiratory time 0.5 second, and FiO₂ 1.0.

Position the infant appropriately and gently inject the first quarter-dose through the catheter over 2-3 seconds. After administration of the first quarter-dose, remove the catheter from the endotracheal tube and continue mechanical ventilation.

In both strategies, ventilate the infant for at least 30 seconds or until stable. Reposition the infant for instillation of the next quarter-dose.

Instill the remaining quarter-doses using the same procedures. After instillation of each quarter-dose, remove the catheter and ventilate for at least

30 seconds or until the infant is stabilized. After instillation of the final quarter-dose, remove the catheter without flushing it. Do not suction the infant for 1 hour after dosing unless signs of significant airway obstruction occur.

After completion of the dosing procedure, resume usual ventilator management and clinical care.

REPEAT DOSES

The dosage of SURVANTA for repeat doses is also 100 mg phospholipids/kg and is based on the infant's birth weight. The infant should not be reweighed for determination of the SURVANTA dosage. Use the SURVANTA Dosing Chart to determine the total dosage.

The need for additional doses of SURVANTA is determined by evidence of continuing respiratory distress. Using the following criteria for redosing, significant reductions in mortality due to RDS were observed in the multiple-dose clinical trials with SURVANTA.

Dose no sooner than 6 hours after the preceding dose if the infant remains intubated and requires at least 30% inspired oxygen to maintain a PaO₂ less than or equal to 80 torr.

Radiographic confirmation of RDS should be obtained before administering additional doses to those who received a prevention dose.

Prepare SURVANTA and position the infant for administration of each quarter-dose as previously described. After instillation of each quarter-dose, remove the dosing catheter from the endotracheal tube and ventilate the infant for at least 30 seconds or until stable.

In the clinical studies, ventilator settings used to administer repeat doses were different than those used for the first dose. For repeat doses, the FiO₂ was increased by 0.20 or an amount sufficient to prevent cyanosis. The ventilator delivered a rate of 30/minute with an inspiratory time less than

1.0 second. If the infant's pretreatment rate was 30 or greater, it was left unchanged during SURVANTA instillation.

Manual hand-bag ventilation should not be used to administer repeat doses. During the dosing procedure, ventilator settings may be adjusted at the discretion of the clinician to maintain appropriate oxygenation and ventilation.

After completion of the dosing procedure, resume usual ventilator management and clinical care.

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CREDITS

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