The Golden Hour

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What is the Golden Hour?

Refers to the initiation of treatment in a systematic, efficient manner in an effort to rapidly stabilize the neonate.
Why is the Golden Hour worth discussing?

- First hour of life is a time of profound and critical adaptation for any baby
- Infant’s risk of mortality is at its highest immediately after birth
- Studies suggest that management during this time period can have a significant impact on long term outcomes
According to the Joint Commission, ineffective communication is a root cause for what percentage of all sentinel events reported?

– A. 25%
– B. 33%
– C. 66%
– D. 75%
Teamwork/Communication

- Effective communication is as important in a resuscitation as knowing what dose of a medication to give.
- Stabilization at birth is associated with multiple considerations that occur both simultaneously and in sequence.
- It's chaotic... we have the opportunity to turn this chaos into "ordered chaos"
Teamwork/Communication

• Checklists

• Briefing and debriefing
The Golden Hour

Thermoregulation
Thermoregulation

- At birth, heat is lost rapidly. Core body temperature can drop by 2-3 degrees C in the first 30 minutes of life.
- Heat loss is even greater the more preterm a baby is.
- Extra care should be taken to prevent hypothermia, one person should be assigned to monitor and intervene in the delivery room.
Thermoregulation

- Why are preterm infants or VLBW babies more at risk?
  - Larger surface area to body mass ratio, weak muscle tone/flexion, thinner immature skin, increased evaporative water loss, poor ability to vasoconstrict in first few days of life, reduced amounts or no brown fat

- Mechanism to compensate for this heat loss requires energy, which increases the calorie consumption and increases their metabolic demands which can have detrimental effects
Thermoregulation

Mechanisms of Heat Loss:

1. Evaporation
2. Conduction
3. Radiation
4. Convection
Evaporation

• Major source of heat loss in the premature infant, especially after delivery
• Continues even after infant is dry in low humidity environment
• Can lose as much as 15 times more water per kg than term infants
• How to prevent?
  – Dry infant and/or place in plastic wrap
  – Keep wet linens away from infant
  – Double walled incubators with at least 60% humidity added
Conduction

- Transfer of heat between 2 solid objects that are in contact with each other
- Radiant warmer, scale, xray
- Rate of heat loss is proportional to the temperature differential between infant and object
- How to prevent:
  - Prewarm all equipment, towels, blankets
    Scales, sterile fields, pre-warm fluids, use
    chemical mattress
Radiation

• Heat lost via radiation of infrared energy from nearby cold surfaces, such as wall or window

• Cooler object will absorb heat from the neonate even if they are not in direct contact

• Rate of loss proportional to temperature differential between infant and object

• How to prevent?
  – Use double walled incubators, warm Environmental surfaces
Convection

• Occur when infant is in contact with moving air or water that is cooler than body temperature.

• Proportional to temperature differential between air/fluid and infant.

• Infant can lose heat to the air very rapidly in cooler rooms (when moving from mom to the warmer, etc)

• How to prevent?
  – Control air flow in the room, minimize opening and closing of doors, cover infant with warm towels when moving infant, provide warmed humidified air, keep portholes closed
Physiologic effects of hypothermia

Remember:

1. Hypothermia in infants is an independent risk factor for morbidity and mortality

2. For every degree below 36 C on admission temperature, mortality increases by 28%
1. Hypoxia

- Increased oxygen need for thermogenesis which can lead to hypoxia, results in increased resp distress and increased oxygen requirements, desaturations
- Can lead to anaerobic metabolism and pulmonary vasoconstriction
- Can lead to surfactant inactivation, pulmonary hemorrhage, and resp failure
- Twice as much oxygen is needed when an infant’s temperature is 35 C vs 37 C
Physiologic effects of hypothermia

2. Hypoglycemia

- Increased metabolic demand to produce heat
- Poorly timed increased glucose need—stores are diminished and may have a delay in glucose delivery depending on vascular access
Physiologic effects of hypothermia

3. Respiratory and Metabolic acidosis

- Anaerobic metabolism and continued hypoxia can lead to lactic acidosis which can compromise cardiac output and worsen the acid/base balance
Physiologic effects of hypothermia

4. Cardiovascular compromise
   - Bradycardia, hypotension, decreased perfusion
   - Can lead to impaired contractility and function

5. Neurologic compromise
   - Increase permeability of the blood-brain barrier
   - Could increase risk for IVH, with alteration in SVC flow and hypoperfusion
What temperature should the delivery room be for a 24 weeker?

a. 72
b. 75
c. 80
d. 78
Thermoregulation in Preterm Infants 30-33 Weeks Gestation

Birth
- OR temperature 72-80°F
- Receive baby in prewarmed sterile towel

Exothermic Chemical Mattress

Omni Bed in Servo-Controlled Mode

Double Hat/ Polyethylene Hat

Use swaddling to maintain neutral environment

Arrival to NICU
- Omni Bed in Servo-Controlled Mode
- Removal of exothermic mattress if necessary; prevent hyperthermia

NICU
- Air Temp Mode
- Once stable per lites
- Maintain Neutral Thermal Environment
- Dress & Wean to Crib
- 1000g

References:

Children's Mercy
Kansas City
Golden Hour(s): Respiratory
Respiratory

- In first hour after birth infant is completing transition from fetal physiology to neonatal physiology
- Accelerated by crying
- Preterm neonate is less capable of normal transition, often need some degree of respiratory support
  - Structurally immature lungs, surfactant deficient, fluid filled, not supported by rigid chest wall, often exposed to infection
  - ~60% of preterm infants (<32 wks) receive PPV in the delivery room
  - Not capable of establishing and maintaining lung inflation, oxygen levels fluctuate, fetal shunts remain open
Question

• Poll audience: How many of you prophylactically intubate based on gestational age and/or weight?
Respiratory

- The goal of respiratory care during the Golden Hour: Support normal gas exchange while avoiding lung injury
  - Oxygen toxicity, volutrauma/barotrauma, atelectasis
- “Encourage” spontaneous breathing
- Early positive pressure to establish and maintain FRC
  - Prophylactic CPAP vs. PPV
- Use the least invasive, most gentle approach to which the infant responds
- Avoid intubation unless necessary for apnea, inadequate heart rate, or for surfactant administration.
Respiratory

- The greatest predictor of BPD appears to be initiation of mechanical ventilation.
- CPAP is a way to stabilize infants without exposing them to mechanical ventilation.
- Use has now been evaluated in multiple trials.
- Demonstrated as effective in infants with birth weights of less than 1000g and as young as 24 weeks.
- Equivalent or perhaps trending towards better outcomes for death or BPD.
- Must be maintained throughout resuscitation and admission, DO NOT remove for any reason!!
- Can consider NIPPV (nasal intermittent positive pressure ventilation) prior to intubation in infant needs additional support.
Respiratory

• Invasive Ventilation
  • All types of mechanical ventilation injure the premature lung
  • Minimal differences in outcomes in different ventilation strategies (SIMV, HFV, etc)
  • Close monitoring and frequent adjustments.
    – VIA monitoring
    – TCM monitoring
    – Tidal Volume/loop monitoring

• Limit duration of mechanical ventilation
Respiratory

• Oxygen
  – Ideal amount of oxygen support is the least amount of oxygen needed to ensure adequate delivery of oxygen to the tissues.
  – Utilize targeted oxygen saturations, pulse oximeters, blenders, and compressed air source.
  – Clinical trials demonstrated successful resuscitation on preterm infants at 30%.
  – Maintain FRC! Open alveoli with good gas exchange will allow for decreased oxygen!

• Volutrauma/Barotrauma
  – Overdistention of alveoli and airways: Increased lung volume (stretch) and not necessarily pressure, promotes lung injury
  – Mechanical damage causes fluid, protein, and blood to leak into the airways, alveoli, and the lung interstitium, interfering with lung mechanics, inhibiting surfactant function, and promoting lung inflammation.
  – Breath to breath analysis of pressure and volume is essential-> difficult to do in the delivery room
  – Difficult to do this in the DR, mostly use chest rise/chest wall movement for assessment.
  – Limit pressure and volume without losing lung volume.
  – Maintain FRC! Avoid alveolar collapse and the pressure required to reopen alveoli!

• Atelectasis
  – Alveoli prone to collapse due to insufficient surfactant quantities or surfactant dysfunction.
  – Only a portion of the lung may be recruited and available for ventilation at any one point in time.
  – The cycle of recruitment followed by derecruitment causes lung injury.
  – Maintain FRC!
  – If intubated give Surfactant
  – improves lung inflation, improves V/Q mismatch, decreases intrapulmonary shunting, stabilizes recruited lung volume
Golden Hour(s): Fluid and Electrolytes
Fluids & Electrolytes

- Growing evidence on the importance of early nutrition and appropriate fluid management

- Transition from fetal to neonatal life is associated with major changes in water and electrolyte homeostasis

- Goal of fluid and electrolyte therapy is to allow the appropriate changes to occur without detrimental disturbances in fluid and electrolyte status.
Fluids and Electrolytes

• Initial fluid therapy goal should allow for normal physiologic weight loss while preventing dehydration and electrolyte imbalance
  – Water accounts for 75-95% of the body weight of the neonate, depending on gestational age
  – Will lose about 15% of body weight and may take up to 3 weeks to regain birth weight

• Allow for expected weight loss and avoid excessive exogenous fluids

• Prevention of weight loss or the decrease in extracellular fluid has been associated with increased morbidities
  – BPD, IVH, NEC, PDA
Fluid and Electrolytes

• Maintenance fluid should be started as soon as access is established

• Maintenance fluid is the amount of fluid required to “maintain” the neonate and takes into account fluid deficits/losses

• Insensible water loss (IWL): Occurs primarily through evaporation of body water through the skin, mucous membranes, and respiratory tract
  – Semipermeable skin covering
  – Warmed humidified air through respiratory tracts
  – Humidity in isolette
Fluid and Electrolytes

• Fluid rates start ~80-100 mls/kg/day
• Requirements for each patient will vary depending on clinical status/disease process

• Key data for fluid titration
  – Urine output
  – Weight
  – Serum sodium level
  – Vital signs
  – Physical exam

• Maintained until urine output increases
Fluid and Electrolytes

- Glucose
  - Fetal nutritional support is interrupted at delivery, including the supply of glucose
  - Fetus at risk for hypoglycemia due to limited glycogen stores and immature gluconeogenesis
  - Blood glucose nadir is at 30-90 minutes of life
  - Best practice is to check glucose at 30-60 minutes after birth
  - Infants need an immediate external glucose source to avoid hypoglycemia
    - GIR of 4-7 mcg/kg/hr meets basal metabolic rate
Fluid and Electrolytes

• Glucose

  – Hypoglycemia: when glucose supply and delivery is inadequate to meet glucose demand.
    • Goal is to maintain blood sugar ≥ 50 and intervene if ≤ 45
    • Hypoglycemia impacts cerebral metabolism and can lead to neuronal cell death and adverse neurodevelopmental outcomes

  – Bolus 2mls/kg D10W, must be followed by continuous infusion

  – If hypoglycemic on fluids, increase GIR by ~2mcg/kg/hr.
Fluid and Electrolytes

- **Protein**
  - Although preterm infant disease such as BPD, IVH, etc play a role in poor growth, over half of the growth failure in this population is due to energy and protein deficits when compared to fetal accretion.
  
  - Protein infusion needs to be started by 1hr of life. Benefits not appreciated during Golden Hour, but months later.
  
  - Evidence shows that no protein infusion for even 1 day initiates a protein deficit from which it is difficult for the preterm infant to recover.
  
  - VLBW infants need ~4g/kg/day to match fetal accretion
  
- **EUGR: Extrauterine Growth Restriction**
  
  - AGA weight at birth falling to a SGA weight
  
  - EUGR @ 36 weeks/DC or later is associated with neurodevelopmental delay
Fluid and Electrolytes

• Lipids:
  – Preterm infants experience disruption in growth period including formation of adipose tissue in the third trimester
  
  – Glucose is primary source of energy in fetus, at birth fat becomes the main source of energy
  
  – Failure to provide adequate non-protein energy in VLBW infants leads to lipolysis and fatty acid oxidation for energy rather than membrane deposition in the brain which could lead to poor outcomes
  
  – AAP recommends an initial dose of 1-2g/kg/day increasing to 3g/kg/day in first few days
  
  – Keep triglyceride level < 200
Poll Question

• When do you initiate minimal enteral nutrition (trophic feeds)
  – <24 hours
  – 1st day
  – 2nd day
  – 3rd day or later
Fluid and Electrolytes

• Enteral Nutrition:

  – Human milk as “medicine”

  – Enteral intake benefits include:
    • intestinal maturation
    • Immune function
    • Improved feeding tolerance
    • Reduced liver dysfunction

  – Minimal enteral nutrition (MEN) should start as soon as maternal milk is available, ~ 6 hours post delivery in infants without intestinal pathology

  – Withholding feeds to “prevent NEC” not supported by recent evidence
# Golden Hour Tools

## Delivery Preparation Checklist

### Admission Team
- NICU
- SMT
- UC/NRT
- RRT
- TP

### Delivery Room:

<table>
<thead>
<tr>
<th>Item</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR/LDR room temp set at 70-80</td>
<td>Shuttle plugged in and ready</td>
</tr>
<tr>
<td>Actual DR temp has pediatric line ready</td>
<td>notify pharmacist of pending delivery</td>
</tr>
<tr>
<td>Omni bed set at 37°</td>
<td>Bull syringe</td>
</tr>
<tr>
<td>Oxygen blender at 0°F</td>
<td>Appropriate sized ET tubing</td>
</tr>
<tr>
<td>Suction catheter 8F/10F</td>
<td>Stylette</td>
</tr>
<tr>
<td>Suction set at 100-150</td>
<td>CO2 detector</td>
</tr>
<tr>
<td>1-piece resuscitator set at 20/5</td>
<td>Handle and appropriate size blade</td>
</tr>
<tr>
<td>Pulse oximeter and pulse ox probe</td>
<td>Neonatal and measuring tool</td>
</tr>
<tr>
<td>ECG monitor</td>
<td>Surfactant for ≤ 32 weeks</td>
</tr>
<tr>
<td>ECG leads</td>
<td>Multi-access device for surfactant</td>
</tr>
<tr>
<td>Blue sterile towels/baby blanket</td>
<td>Saline wipe</td>
</tr>
<tr>
<td>Stethoscope</td>
<td>Sterile glove</td>
</tr>
<tr>
<td>Thermometer</td>
<td>Tape</td>
</tr>
<tr>
<td>Plastic bag &lt; 50 weeks</td>
<td>Ventilator; pre-calibrated</td>
</tr>
<tr>
<td>Heated thermal mattress ≤ 35 weeks</td>
<td>Mayo stand for emergent procedures</td>
</tr>
<tr>
<td>Skin temp probe and gel heart</td>
<td>2 hats; consider plastic wrap for head</td>
</tr>
<tr>
<td>Sterile water for humidity, 60%</td>
<td></td>
</tr>
<tr>
<td>Fung for midline positioning</td>
<td></td>
</tr>
<tr>
<td>Infant code Cart/Inspiratory box</td>
<td></td>
</tr>
</tbody>
</table>

### Admission Room:

<table>
<thead>
<tr>
<th>Item</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant pre-admitted with orders</td>
<td>Atlantic pump; programmed with acn #</td>
</tr>
<tr>
<td>Unit entered in chart; monitor linked</td>
<td>2 trans for muris pump; on one poles</td>
</tr>
<tr>
<td>Room temp set at min of 72°</td>
<td>orange caps on iv pole</td>
</tr>
<tr>
<td>Central line cart</td>
<td>bendy bannner covers for positioning</td>
</tr>
<tr>
<td>UAC/IVC lines prepared and ready</td>
<td>Diaphorometer</td>
</tr>
<tr>
<td>DS/DW &amp; IV tubing sterile prepd</td>
<td></td>
</tr>
<tr>
<td>UAC fluids primed with transducer</td>
<td></td>
</tr>
<tr>
<td>All IV tubing labeled</td>
<td></td>
</tr>
<tr>
<td>Admission needs</td>
<td></td>
</tr>
<tr>
<td>patient labels</td>
<td></td>
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<tr>
<td>State screen form</td>
<td></td>
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</tbody>
</table>
Golden Hour Tools

<table>
<thead>
<tr>
<th>Maternal History:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To be reviewed by resuscitation team prior to delivery</td>
</tr>
</tbody>
</table>

| Pro Delivery Huddle Held? Y/N |
| Delayed Cord Clamping Plan? UC/MMCC |

<table>
<thead>
<tr>
<th>Mother's Name:</th>
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<tbody>
<tr>
<td>Age:</td>
</tr>
<tr>
<td>G**PA</td>
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<table>
<thead>
<tr>
<th>Gestational Age:</th>
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<tbody>
<tr>
<td>Multiple Gestation? Type*</td>
</tr>
<tr>
<td>PNC?</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Estimated Fetal Weight:</th>
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<tbody>
<tr>
<td>Membrane Status:</td>
</tr>
<tr>
<td>PDA?</td>
</tr>
<tr>
<td>Polyhydramnios?</td>
</tr>
<tr>
<td>Fetal Monitoring:</td>
</tr>
<tr>
<td>Doppler Studies:</td>
</tr>
<tr>
<td>Maternal Labs:</td>
</tr>
<tr>
<td>Blood Type:</td>
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<tr>
<td>Antibody:</td>
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<tr>
<td>Hep B:</td>
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<tr>
<td>HIV:</td>
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<tr>
<td>Syphilis:</td>
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<tr>
<td>Gonorrhea:</td>
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<td>Chlamydia:</td>
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<tr>
<td>Rubella:</td>
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<tr>
<td>MMR:</td>
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<tr>
<td>Antibiotics?</td>
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<td>Td:</td>
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<tr>
<td>Time Given:</td>
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<tr>
<td>Betamethasone:</td>
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<tr>
<td>Date Given: Pain Medication</td>
</tr>
<tr>
<td>Med:</td>
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<tr>
<td>Time Given:</td>
</tr>
<tr>
<td>Magnesium:</td>
</tr>
<tr>
<td>Other Meds:</td>
</tr>
<tr>
<td>Diabetes:</td>
</tr>
<tr>
<td>Type:</td>
</tr>
<tr>
<td>Med:</td>
</tr>
<tr>
<td>Hypertension:</td>
</tr>
<tr>
<td>Type:</td>
</tr>
<tr>
<td>Med:</td>
</tr>
<tr>
<td>Congenital anomalies?</td>
</tr>
</tbody>
</table>
# Golden Hour Protocol

## Golden Hour Protocol ≤ 32 Weeks Gestational Age

<table>
<thead>
<tr>
<th>Time</th>
<th>MD/NRP</th>
<th>RT</th>
<th>UC/NRT</th>
<th>RN</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30 mins</td>
<td>- Notify admission team; assign roles</td>
<td>- Ensure ventilator is calibrated and in delivery room/ICU</td>
<td>- Set up delivery room and admission room; complete delivery room checklist</td>
<td>- Notify pharmacy of admission; sterility held 05/13/2019; sterility hang bag: flush for LID</td>
</tr>
<tr>
<td></td>
<td>- Review prenatal history/complete maternal history/checklist</td>
<td>- Set up 3-place resuscitator to 20%</td>
<td></td>
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<tr>
<td></td>
<td>- Record infant and sign and hold admission order</td>
<td>- Measure oxygen blender at A:30%</td>
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<tr>
<td></td>
<td>- Set up for UAC/UVC placement</td>
<td>- Ensure set probe/pulse ox is ready</td>
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<tr>
<td></td>
<td>- Hold pre-admission bundle to communicate history and anticipated resuscitation needs</td>
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## 30-60 mins

<table>
<thead>
<tr>
<th>Time</th>
<th>MD/NRP</th>
<th>RT</th>
<th>UC/NRT</th>
<th>RN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Direct/assist team</td>
<td>- Connect pulse ox to machine, ensure in max setting</td>
<td>- Assist with transport to unit</td>
<td>- Monitor temperature</td>
</tr>
<tr>
<td></td>
<td>- Assist with polyethylene bag (&lt; 30 weeks only)</td>
<td>- Use noffill/3-place resuscitator as primary mode of ventilation</td>
<td>- Monitor spO2 and adjust SpO2 for NICU sat guidelines</td>
<td>- Obtain weight/KC</td>
</tr>
<tr>
<td></td>
<td>- Chemical mattress (&lt; 30 weeks)</td>
<td>- Establish NPO</td>
<td>- Transport to NICU; place warm blankets on infant and utilize Omni bed shuttle</td>
<td>- Transport to NICU; place warm blankets on infant and utilize Omni bed shuttle</td>
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<tr>
<td></td>
<td>- Place double hat/diastic wrap</td>
<td>- Clear airway as indicated</td>
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<td></td>
<td>- Access for further intervention</td>
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</table>

## 1 hour

<table>
<thead>
<tr>
<th>Time</th>
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<th>RT</th>
<th>UC/NRT</th>
<th>RN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Monitor response to stabilization</td>
<td>- Maintain CVP</td>
<td>- Perform brief assessment</td>
<td>- Assist with monitoring</td>
</tr>
<tr>
<td></td>
<td>- Maintain PediFIO2 as directed</td>
<td>- Assess heart rate in setting</td>
<td>- Position baby for line placement</td>
<td>- Assist with documentation</td>
</tr>
<tr>
<td></td>
<td>- Assist with intubation if indicated and secure ET tube with retractor</td>
<td>- Assist transport team as needed</td>
<td>- Therapeutic hemo dilution</td>
<td>- Assist with monitoring</td>
</tr>
<tr>
<td></td>
<td>- Give surfactant if indicated</td>
<td>- Prep for transport when indicated</td>
<td>- CVP if necessary</td>
<td>- Hang TPN/drip slowly once available</td>
</tr>
<tr>
<td></td>
<td>- Place infant on vent if indicated</td>
<td>- Obtain weight and HC</td>
<td>- Assess vital 5 protocols</td>
<td>- Keep family updated</td>
</tr>
<tr>
<td></td>
<td>- Initiate VTA</td>
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## 1.5 hours

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<tbody>
<tr>
<td></td>
<td>- Evaluate CXR/KUB adjust lines</td>
<td>- Reviewchg labs</td>
<td>- Connect pressure line to UVC as soon as access is established</td>
<td>- Assist with monitoring</td>
</tr>
<tr>
<td></td>
<td>- Complete assessment</td>
<td>- Update family</td>
<td>- Obtain labs</td>
<td>- Assist with documentation</td>
</tr>
<tr>
<td></td>
<td>- Vital signs</td>
<td></td>
<td></td>
<td>- Hang TPN/drips slowly once available</td>
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<tr>
<td></td>
<td>- Intubate</td>
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<tr>
<td></td>
<td>- Obtain IVAT ABG at time of intubation and before UVC for replacement</td>
<td>- Target ph: &gt;7.25</td>
<td>- Give antibiotics</td>
<td>- Keep family updated</td>
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## 2 hours

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</thead>
<tbody>
<tr>
<td></td>
<td>- Intubate</td>
<td>- Monitor temperature</td>
<td>- Secure umbilical lines</td>
<td>- Assist with monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Secure umbilical lines</td>
<td></td>
<td>- Hang TPN/drips slowly once available</td>
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## 2.5 hours

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<td>- Assist with monitoring</td>
<td>- Assist with documentation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Secure umbilical lines</td>
<td></td>
<td>- Hang TPN/drips slowly once available</td>
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## 3 hours

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Golden Hour Protocol

Golden Hour Protocol

Document:
- DR temperature PE-PED
- Inclined shoulder support for resuscitation/ventilation
- Neonatal intubation set available and placed onto radiant warmer
- Needle available for use
- Needle supplies to have at the bedside: heparin, LUC and single-lumen LUC

Communication:
- AWHN has on an orderwire or secure cellular device, advise CT to perform delayed cord clamping for the newborn. On call CT to place an umbilical line for delivery. DCC, DCC, and place infant onto warmer towels during DCC then pass to the RN after delivery
- AWHN report person and update them until birth is complete regarding delivery plan

Preparation:
- Prepare "sheet" on radiant warmer where infant will be placed
- ATTENTION to sound, light, and handling as environmental stressors to the premature infant

Equipment:
- Insure O2 delivery at <80%, availability of NARC and ECMO, appropriate size masks, ETs and cannulae
- Insure IV and OR for delivery of 33+6, PEPT
- Insure readiness of an intubation bag and mask and at least a suction set up available at the bedside in the newborn ICU

Perform NCP Resuscitation

Perform IVF Resuscitation Guideline

RN

Practitioner

Step 1:
- Place infant on head-up position with expressed means of resuscitation and then wrap infant in head-up position
- Admit=infant to NICU
- ATTENTION to developmental handling
- Pulse oximetry R/ L hand prior to placing intubation
- Obtain and document weight, height

Step 2:
- Use Neopuff CPR at initial H2O of 30% as primary mode of ventilation
- Adjust CPR with pulse oximetry and ventilation for age in minutes
- Administer surfactant if intubated
- Place IVF hook prior to CIV if felt by practitioner to be in a comfortable position with good blood return
- Prepare ivset for hydration per protocol

Steps 1 to NICU

RT

Step 2:
- Adjust H202 for O2 Targeting
- Adjust arterial CO2 monitoring per protocol
- Monitor infant for umbilical line placement
- Use a line of developmental positioning
- Ensure VII probe secured to infant and bed on ISS control
- String starter TPN and UVC fluids (if ordered) for central line delivery
- Maintenance IVF fluid prior to start if felt by practitioner to be in a comfortable position with good blood return
- Prepare ivsets for hydration per protocol

Step 3:
- Update family at bedside
- Confirm line position prior to CIV
- Start ASX and pressure on LUC verification per CIV
- Complete admission assessment
- Close ivset and start hydration per protocol

Post DR Transition

RT

Step 2:
- UVC double lumen for all infants
- LUC based on clinical condition
- Begin line placement
- Position infant in bed for IV and UVC
- Provide intravenous line for stabilization
- Place a double lumen lumen LUC first and then IV immediately once good blood return obtained and labs drawn
- Don't wait for IV lab
- Dialyse infusion and vasopressors
- Central line placement verified by x-ray
- Limit attempt time for UVCUAC to 30 minutes total, if UVC necessary and unsuccessful then abort at time 5 minutes prior to place IV

Step 3:
- Update Parents
- Provider: Additional Provider to gather history, place orders, and update family as indicated
- Update family
- Time of surf

Patient Status

Recorded

Central Lines:

Start Time:

Finish Time:

UVC Successful: Y N
UAC Successful: Y N
N/A

Fluids (circle one):
- 0.9%OW Starter TPN
- Time Hung:
- Starter IV Y N
- Time Hung:
- Admit Rectal Temp:
- Surfactant after adm:
- Time of surf:
- Family Updated:
- M-D Other
- Time:
References:


