Purpose: To provide guidance to practitioners caring for pediatric patients during a disaster. This form is to be filled out by the initial hospital and sent with the patient (either when discharged home or to another facility) to communicate what initial management has been completed.
Disclaimer: This guideline are not meant to be all inclusive, replace an existing policy and procedure at a hospital or substitute for clinical judgment. These guidelines may be modified at the discretion of the healthcare provider.

In a disaster scenario, normal routine newborn care may be inadvertently delayed. Therefore, an evaluation of the newborn by a health care provider with expertise in the care of a newborn (e.g., pediatrician, family practice physician, or pediatric nurse practitioner) should occur as soon as possible. The form below and information found in this care guideline is provided to assist those hospitals who typically do not care for newborns to provide necessary care until the above experts can evaluate the patient.

PHYSICAL EXAM	YES	NO	ISSUE	PLAN
Exam WNL				
PHYSICAL FUNCTIONS				
Vital signs WNL See attached for normal values				
Pulse ox screening □ Age of child ____ □ Right hand SpO_2%___ □ Left or Right Foot $SpO_{2\%}$___				
Any medical problems?				
Anomaly present				
Feeding assessment □ Breastfeeding □ Bottle feeding				
Voiding				
Stooling				
□ Birth weight _____ □ Current weight_____				
Weight loss >7%				
Jaundice absent				
Signs or concerns for infection				
Normal hearing screening				
LAB RESULTS				
Maternal □ Blood type/Rh _____ □ Group B streptococcus ____ □ Other (i.e. HIV)_____				
Newborn □ Blood type/Rh_____ □ Glucose _____ □ Hematocrit _____ □ Bilirubin _____ □ Phenylketonuria (PKU)_____ □ HIV if mother's status is unknown □ Other_____				
MEDICATIONS				
Hepatitis B				
Vitamin K **Dose given: Route:**				
Eye prophylaxis **Medication used:**				

Newborns are one of the most vulnerable population groups.
Hand hygiene is essential.
Breastfeeding is the gold standard.
Keep mother and baby together.

Care of Newborn after Delivery in Transition Period (0-8 hours)

<table>
<tr><th>INTERVENTION</th><th>CAVEATS/RATIONALE</th></tr>
<tr><td>Dry baby immediately with a towel and then gently suction mouth and nose</td><td></td></tr>
<tr><td>Calculate APGAR Scores:
Perform at 1 and 5 minutes.
Repeat APGAR scores every 5 minutes for 20 minutes or until APGAR score ≥ 7.
If child is stable with a pink core and a 5-minute APGAR score >7, then rewrap the baby in clean, warm, dry blankets and allow parents to hold baby.</td><td>Sample APGAR Score Card
<table>
<tr><th rowspan="2">SIGN</th><th colspan="3">SCORE</th></tr>
<tr><th>0</th><th>1</th><th>2</th></tr>
<tr><td>Appearance</td><td>Blue</td><td>Pink body, blue extremities</td><td>All pink</td></tr>
<tr><td>Pulse</td><td>Absent</td><td><100</td><td>>100</td></tr>
<tr><td>Grimace</td><td>No response</td><td>Weak cry and grimace</td><td>Vigorous cry</td></tr>
<tr><td>Activity</td><td>Flaccid, limp</td><td>Some flexion</td><td>Active motion</td></tr>
<tr><td>Respirations</td><td>Absent</td><td>Slow, irregular</td><td>Good, vigorous cry</td></tr>
</table></td></tr>
<tr><td>At 15 minutes old assess:
Overall condition
Respiratory status
Cardiovascular status
Skin color</td><td><u>Respiratory Status:</u>
Respiratory rate: 30-60 breaths/minute
May have coarse rales until amniotic fluid is cleared from infant’s lungs
Grunting and retractions may occur until amniotic fluid is cleared from infant’s lungs but these should resolve within an hour</td></tr>
</table>

• Muscle tone • Temperature	○ *Abnormal*: ▪ Apnea lasting longer than 20 seconds ▪ Persistent central cyanosis ▪ O_2 <85% in room air ▪ Needing supplemental O_2 after 2 hours of age ▪ Excessive oral mucus ▪ Drooling ▪ Periods of cyanosis ▪ Choking or coughing episodes • <u>Cardiovascular Status</u>: ○ Heart rate: 120-160 bpm. Heart rate may fall to 80 bpm, but without changes in color or respirations ○ Murmurs can be normal ○ *Abnormal*: ▪ Persistent bradycardia ▪ Capillary refill > 3 seconds and unstable blood pressures may indicate: hypoxia, sepsis, CNS injury, or other cardiovascular problems • <u>Neurological/Muscle Tone:</u> ○ *Abnormal*: ▪ Listlessness ▪ Lethargy ▪ Hypotonia ▪ Irritability ▪ Excessive tremors ▪ Jitteriness • <u>Skin color</u>: ○ *Abnormal:* ▪ Persistent pallor in the post-partum period may indicate anemia, cardiovascular collapse, or intra-partum asphyxia • <u>Temperature:</u> ○ Temperature may fall to 36.5°C (97.7°F) at the mean age of 75 minutes old ○ Do not bathe the baby until the temperature is stable between 36.5°-37.0°C (97.7°-98.0°F)

Check axillary temperature every 30-60 minutes during transition	• Infant skin-to-skin contact with mother keeps the baby warm • If using a radiant warmer then must compare infant's temperature against the radiant warmer

Perform glucose screen if newborn is high risk or symptomatic	• Newborns have limited glycogen stores which are rapidly depleted during times of stress.
	• Hypoglycemia is < 50 mg/dL
	  ○ This value is based on the STABLE recommendation and is typically used for high risk newborns. PALS and NRP have other values listed as their definition of hypoglycemia (45 and 40, respectively).
	• High Risk:
	  ○ Premature
	  ○ Small for gestation age
	  ○ Mothers who were diabetic
	  ○ Any newborn looking ill
	• Symptoms:
	  ○ Irritability, tremors, jitteriness, seizures
	  ○ Abnormal high pitch cry
	  ○ Exaggerated Moro reflex
	  ▪ Definition of Moro reflex: In response to loss of balance, newborns arch their back, flings their arms outwards, extends the legs, and opens the hands, after which they slowly returns to a flexed position
	  ○ Lethargy, limpness, hypotonia
	  ○ Cyanosis, apnea, irregular respirations
	  ○ Hypothermia, vasomotor instability, temperature instability
	  ○ Poor suck
	  ○ Feeding poorly or refusal to feed when feeding well previously
	• **Treatment for hypoglycemia**:
	  ○ If possible, allow newborn to feed (breast milk or formula)
	  ○ If unable to feed, consider providing pumped breast milk or formula via NG
	  ○ If unable to take PO, administer Dextrose 10% bolus of 2 mL/kg
	• If hypoglycemia reoccurs or lasts 48-72 hours post-delivery:
	  ○ Could suggest an inborn error of metabolism or some kind of endocrine disorder which necessitates further medical care

Administer eye prophylaxis • Erythromycin 0.5% ointment ***OR*** • Silver nitrate 1% solution ***OR*** • Tetracycline 1% ointment	• Illinois State mandate • Best given within 1st hour of delivery

Administer Vitamin K • Infant weight < 1.5 kg: 0.5 mg IM as a single dose • Infant weight > 1.5 kg: 1.0 mg IM as a single dose	Vitamin K • Give within 1 hour of birth • Given to prevent Vitamin K Deficiency Bleeding (aka "Hemorrhagic Disease of the Newborn")
Newborn Complications: • Hyperbilirubinemia: o Bilirubin should be checked in a newborn that is jaundiced before 24 hours of age • Sepsis: • Other potential interventions depending on presenting symptoms: o Oxygen administration o Suctioning as needed o Normothermic environment o Bedside glucose o Pulse oximetry reading in right arm compared against any other extremity o Frequent monitoring o Chest X-ray o Echocardiogram o Exogenous surfactant fluid replacement therapy o Mechanical ventilation o Antibiotic coverage o IV nutrition if respiratory distress interferes with feeding	• Hyperbilirubinemia: o Common causes: ▪ Breast-feeding-associated jaundice ▪ ABO & Rh incompatibility ▪ Polycythemia ▪ Bruising of the newborn (e.g., cephalhematoma) ▪ Bowel obstruction ▪ Inborn errors of metabolism ▪ G6PD deficiency o Treatment for breast-feeding-associated jaundice: ▪ Promote frequent breastfeeding (minimal 8-10 times/day) ▪ Have mother pump her breasts after feeding ▪ Avoid pacifiers ▪ Avoid supplementation unless medically indicated (excessive weight loss or hypoglycemic). ▪ Expressed breast milk or formula is preferred o Other treatment includes phototherapy requiring qualified personnel • Sepsis: o Symptoms may include: ▪ Apnea ▪ Respiratory distress ▪ Poor activity ▪ Poor feeding ▪ Hypothermic ▪ Poor color o Risk factors include: ▪ Maternal group B streptococcus ▪ Premature rupture of membranes ▪ Mother with intrapartum fever ▪ Chorioamniotis

Feeding:
• Promote breastfeeding within 30-60 minutes after delivery
  ○ Feed every 2 -3 hours so at least 8 to 12 feedings occur every 24 hours
• Bottle feed when breastfeeding or pumped breast milk not possible
  ○ 2-3 oz. of formula per feeding every 2-3 hours
	• Early and exclusive breastfeeding is best for normal term, healthy neonates and prevents hypoglycemia
	• Contraindications to breastfeeding:
	  ○ Mothers who are/have:
	  ▪ +HIV
	  ▪ Active untreated TB
	  ▪ Radioactive milk
	  ▪ Using street drugs
	  ▪ Herpes simplex lesions on breasts
	  ▪ Taking anti-metabolites or chemotherapeutic agents, and small number of other medications until they clear from the milk

Caring for Newborns After Delivery (8-96 hours)

INTERVENTION	CAVEATE/RATIONALE

Vital Signs:
• Obtain vital signs every 8 hours
  ○ RR: count for full minute
  ○ HR: auscultate apical pulse for full minute
  ○ Pulse oximetry screening: perform when at least 24 hours old
  ○ BP: not recommended if well newborn
  ○ Temperature
	Vital Signs:
	• RR:
	  ○ Normal respirations: 30-60 breaths/minute
	  ○ Respiratory distress includes:
	  ▪ Grunting
	  ▪ Nasal flaring
	  ▪ Retractions
	  ▪ Cyanosis
	  ▪ Tachypnea
	  ▪ Apnea
	  ▪ Hypoxemia
	  ○ *Abnormal:*
	  ▪ Apnea > 15 seconds may indicate:
	  ○ Sepsis
	  ○ Maternal drugs/medications

	○ Hypoglycemia ○ Anemia ○ Other metabolic abnormality ▪ Tachypnea > 60 breaths/minute may indicate a respiratory, cardiovascular or metabolic problem • <u>HR</u>: ○ Normal heart rate: 80-160 bpm (slower when sleeping and faster when crying) ○ *Abnormal*: ▪ Symptoms of cardiovascular compromise may include: ○ Tachycardia ○ Unequal pulses or blood pressures ○ Poor pulses ○ Respiratory distress ○ Cyanosis of face ○ Central cyanosis ○ Hepatomegaly ▪ Abnormal heart rate (80 < bpm > 180) may indicate: ○ Sepsis ○ Asphyxia ○ Hypoxemia ○ Heart block ○ Anemia ○ Hypovolemia ○ Sepsis • <u>Pulse oximetry screening</u>: ○ Normal is at least ≥ 95% in either extremity with a ≤ 3% absolute difference between upper and lower extremity. ○ Must use right hand (preductal) and on one foot (post-ductal) ○ SpO_2 < 90% require an expert evaluation to test for infectious and pulmonary causes and for ruling out critical congenital heart disease. ○ High altitudes may result in false positives. • <u>Temperature</u>: ○ Normal axillary temperature: 36.5°-37°C (97.9°-98.3°F) ○ If not normothermic must consider causes:

	▪ Environmental ▪ Sepsis ▪ Postasphyxial insult ▪ Low brown fat stores ▪ Prematurity ▪ Small for gestational age (SGA) o Must reevaluate temperature minimally every 30 minutes if temperature is abnormal (<36.5° or >37°C (97.9°/98.3°F)). ▪ Place baby skin-to-skin contact with mother if infant's temperature <36.5° C (97.9°F) or use a radiant warmer if skin-to-skin contact not feasible. ▪ Remove environmental factors (e.g., over-bundling or hot room) if temperature > 37°C (98.3°F).
Diet/Feeding: • Breastfeeding: o Every 2 -3 hours so at least 8 to 12 feedings occur every 24 hours • Bottle feeding: o 2-3 oz of formula per feeding every 2-3 hours	Diet/Feeding: • General: o Early signs of hunger: ▪ Increased alertness ▪ Physical activity ▪ Mouthing or rooting o Late sign of hunger ▪ Crying • Burping: o Attempted when newborn has ingested 0.5 to 1 ounce of formula and at the end of every feeding o Ensure airway is maintained and the head and trunk are supported o Gently rub or pat from the lower back in an upwards motion with the newborn sits with support on the caregiver's lap or while being held upright against a caregiver's chest • Breastfeeding: o Preferred choice even during disasters o Feedings should last about 10-15 minutes of active suck on each breast o Alternate starting breast at each feeding o May need to wake up for feedings especially if it has been four hours since the last feeding o Do not interrupt breastfeeding o Do not offer any type of supplement feedings unless ordered by a physician o Offer pacifier only after breastfeeding has been well established. Otherwise use pacifier only during specific circumstances like pain relief during medical procedures

	• Bottle feeding:
	  ○ Iron-fortified infant formula that is commercially-prepared is the recommended
	  ○ Do not prop the bottle
	  ▪ Infants must be held in a cuddled position so that the head is slightly above the stomach.
	  ▪ Position the angle of the bottle to prevent air swallowing.
	  ▪ Can rub the nipple softly along the lower lip to help open the infant's mouth
	  ○ All feeding supplies should be washed with clean hot soapy water and then rinsed with clean hot water and allowed to air dry.
	  ▪ Sterile technique is recommended when there is a problem with the clean water supply, lack of access to refrigeration, or when the newborn has an immune deficiency problem
	  ○ Prepare formula according to manufacturer's recommendations
	  ▪ Only prepare bottles with the amount formula that is expected to be consumed in one feeding.
	  ▪ Discard unused formula within 1 hour.
	  ▪ Bottles can be made in advance and stored in a refrigerator for up to 24 hours.
	  ○ Warming formula:
	  ▪ Formula should be warmed to room temperature only
	  ▪ Avoid formula that is either cold or too hot
	  ▪ Do not warm formula in the microwave.
	  ▪ May warm formula by holding the bottle under warm running water.
	  ▪ Test the temperature of warmed formula by shaking the bottle first before applying a few drops to the adult's inner wrist
	• Consider placing a nasogastric tube (NG) if newborn is not NPO but is having difficulty feeding or is hypoglycemic and administer either pumped breast milk or formula as indicated above

Elimination:
• Urine output:
  ○ First 1-2 days: 2-6 wet diapers/day
  ○ 3-5 days: 3-5 wet diapers/day
  ○ 5-7 days: 4-6 wet diapers/day
• Stool:
  ○ First 1-2 days: well newborns pass meconium stool (black, tarry stool).
  ○ 3-5 days: 3-4 stools/day
  ○ 5-7 days: 3-6 stools/day
	Elimination:
	• Staff should notify physician if no urine output for 12 hours
	• Routine circumcision not recommended by the AAP
	• Do not forcibly retract foreskin

Skin Care/Cord Care:
• Skin care:
  ○ Bath every 2-3 days as long as the face and diaper area are kept clean regularly
• Cord Care:
  ○ Clean with every diaper change and with sponge baths
	Skin Care/Cord Care:
	• <u>Skin care</u>:
	  ○ Observe face, trunk, and extremities for cyanosis or jaundice
	  ○ Do not scrub vernix off
	  ○ Scrubbing may damage skin
	  ○ Vernix may offer antibacterial properties
	  ○ Use a gentle soap without perfumes
	• <u>Cord care</u>:
	  ○ Cord typically falls off in 7-10 days
	  ○ Make sure diaper does not cover the cord
	  ○ No isopropyl alcohol on cord
	  ○ May sponge with warm water on the cord until it falls off
	  ○ When the cord has fallen off, may use gentle soap and water
	  ○ Do not immerse the baby in bath water until the cord has fallen off
	  ○ *Abnormal*:
	  ▪ Drainage that looks serous, purulent, or sanguineous
	  ▪ Circumferential redness at base of the cord