Emergency Medical Dispatch

Emergency Medical Care begins when 911 or a dispatch center is called. Telecommunications Specialists that are certified in Emergency Medical Dispatch (EMD) with the New Hampshire Bureau of Emergency Communications serve as the "First, First Responders" and are an integral part of the EMS system. They are the first-activated professional link in the chain of survival for cardiac arrest care and provide vital interim care pending EMS arrival. New Hampshire currently uses the Medical Priority Dispatch System (MPDS). Some of the Telecommunication Specialists' functions include:

- Timely notification to local dispatch centers.
- Systematized caller interrogation and pre-arrival instructions using scripted protocols.
- Triage emergency medical calls by level of medical acuity and provide dispatch centers with standardized dispatch determinants (i.e., Omega, Alpha, Bravo, Charlie, Delta, Echo).
- With local medical director approval, each EMS agency may choose what resources and type of response (i.e., lights and siren versus flow of traffic) for each dispatch determinant.

Respond to Scene in a Safe Manner

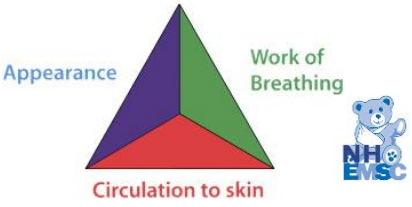
- Review dispatch information.
- Use lights and sirens and/or pre-emptive devices when responding as appropriate per emergency medical dispatch information and local guidelines.
- Use Incident Management/Command System (IM/CS) for all responses and scene management.

Scene Arrival and Size-up

Universal precautions, scene safety, environmental hazards assessment, number of patients, need for additional resources, and bystander safety. Initiate Mass Casualty Incident procedures as necessary.

Patient Approach

- Determine mechanism of injury / nature of illness.
- Determine if pediatric protocols apply. "Pediatric Patient" is defined as a child who fits on a length-based resuscitation tape up to 36 kg (79 lbs) or 145 cm (57 in).
- Establish responsiveness.
- General Impression.



	Appearance	Work of Breathing	Circulation to Skin
Adult	Awake, speaking, eye opening, agitated, limp, unresponsive	Labored, noisy, fast, slow, equal chest rise	Pink, flushed, pale, ashen, cyanosis
Pediatric	Muscle tone, interactiveness, consolability, gaze/look, speech/cry	Airway sounds, body position, head bobbing, chest wall retractions, nasal flaring	Pallor, mottling, cyanosis

- Determine if DNR/Comfort Care protocol applies (DNR Policy).

Airway and Breathing

- Airway
  - Assess the patient for a patent airway.
  - Open the airway using a head-tilt/chin-lift, or a jaw thrust if suspicious of cervical spine injury.
  - Suction the airway as needed.
  - Treat foreign body obstruction in accordance with current guidelines.
  - Consider an oropharyngeal or nasopharyngeal airway.
  - Consider advanced airway interventions as appropriate and as trained and credentialed to perform.
- Assess breathing: rate, effort, tidal volume, and breath sounds.
  - If breathing is ineffective, ventilate with 100% oxygen using Bag-Valve-Mask.
  - If breathing is effective, but patient's oxygen saturation remains ≤ 94% (≤ 90% for COPD patient) or short of breath, administer oxygen.
    - Both skin signs and pulse oximetry are important in assessing potential hypoxia.
  - For patients with an SpO_2 of 100%, consider titrating oxygen lower while maintaining SpO_2 ≥ 94% - 98%.
  - Consider capnography ($EtCO_2$) and/or CO-oximetry, if available.
  - Assess lung sounds and chest.

Protocol Continues

Protocol Continues

Circulation Assessment

- Assess patient's pulse, noting rate, rhythm, and quality.
- Control active bleeding using direct pressure, pressure bandages, tourniquets, or hemostatic bandages.
  - Hemostatic powders or granules are not approved.
- Assess patient's skin color, capillary refill, temperature, and moisture.
- Assess blood pressure.
- Provide IV access and fluid resuscitation as appropriate for the patient's condition.
  - For adult patients, administer fluids to maintain systolic blood pressure per the Shock Protocols 2.19A, 2.20, 4.6.
  - For pediatric patients, administer fluids based on physiological signs and therapeutic end-points per the Shock Protocol 2.19P, 2.20, 4.6.
  - For adult patients with suspected dehydration without shock administer IV fluids as indicated in increments of 250 mL 0.9% NaCl or Lactated Ringers.
  - Consider obtaining a blood sample, per receiving hospital's preference.

NOTE: An IV for the purposes of these protocols is a saline lock or line with 0.9% NaCl (normal saline) or Lactated ringers, unless otherwise specified in an individual protocol.
Routes of medication administration when written as "IV" can also include "IO".

Disability Assessment

- Assess level of consciousness appropriate for age; use Glasgow Coma Scale for trauma.
- Spinal motion restriction by collaring patient, placing flat on cot and securing, if indicated by Spinal Injury Protocol 4.7.
- If a child requires spinal motion restriction, transport in a child safety seat (See Spinal Trauma 4.7 and Pediatric Transportation 8.13).

Transport

- The destination hospital and mode of transport are determined by the prehospital provider with the highest medical level providing patient care; it should not be determined by fire, police or bystanders.
- Refer to the Trauma Triage and Transport Decision 8.18 and Air Medical Transport 8.0 policies as necessary.
- Notify receiving facility as early as possible.
- The majority of patients do not medically require transport with lights and sirens. Lights and sirens should be justified by the need for immediate medical intervention that is beyond the capabilities of the ambulance crew using available supplies and equipment, (e.g. STEMI, acute stroke, multi-system trauma). Use of lights and sirens should be documented in the patient care report.
- Non emergent medical transports from home or a medical facility with self or caretaker managed devices is an EMT level skill. The caretaker must travel with the patient if it is not a self managed device. See Continuity of Care Policy 8.6.

For more information on hospital services click on this LINK

Secondary/Focused Assessment and Treatment

- Obtain chief complaint, history of present illness, and prior medical history.
- Complete a physical assessment as appropriate for the patient's presentation.
- Determine level of pain.
- Consider field diagnostic tests including: cardiac monitoring, blood glucose, temperature, stroke assessment, pulse oximetry, capnography, etc.
- Dress and bandage lacerations and abrasions.
- Cover evisceration with an occlusive dressing and cover to prevent heat loss.
- Stabilize impaled objects. Do not remove an impaled object unless it interferes with CPR or your ability to maintain the patient's airway.
- Monitor vital signs approximately every 15 minutes (more frequently if the patient is unstable).

Protocol Continues

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Ventilation Rates		
Patient	Basic Airway	Supraglottic/ETT*
Adult	12 – 20 breaths per minute	8 – 10 breaths per minute
Child	12 – 20 breaths per minute	8 – 10 breaths per minute
Infant	20 – 30 breaths per minute	8 – 10 breaths per minute

** Ventilation rates should be titrated to goal $EtCO_2$, if available, or patient conditions (e.g., severe asthma, aspirin overdose, traumatic brain injury)*

Note: In children, pulse oximetry may identify clinically significant hypoxia that may be missed through evaluation of skin signs alone.

Percent O2 Saturation	Ranges	General Patient Care
94% – 100 %	Normal	Usually indicate adequate oxygenation; validate with clinical assessment (see below)
90% – 93%	Mild hypoxia	Consider O_2 to maintain saturation ≥ 94 - 98%. Caution in COPD patients
Less than 90%	Moderate to severe hypoxia	Give oxygen to maintain saturation ≥ 94 - 98%, as needed

Notes:

- If pulse oximeter's heart rate is not the same as ECG monitor's heart rate, oxygen saturation reading may not be reliable.
- If patient is profoundly anemic or dehydrated, oxygen saturation may be 100%, but patient may be hypoxemic.
- False pulse oximetry readings may occur in the following: hypothermia, hypoperfusion, carbon monoxide poisoning, hemoglobin abnormality (sickle cell anemia), vasoconstriction, and nail polish.

$EtCO_2$ Reading	Ranges	General Patient Care
35 mmHg – 45 mmHg	Normal	Usually indicate adequate ventilation; validate with clinical assessment (see below)
Greater than 45 mmHg	Hypercarbia	Consider increasing ventilatory rate, assess adjuncts for occlusions
Less than 35 mmHg	Hypocarbia	Consider slowing ventilatory rate

Pediatric Respiratory Distress	Pediatric Respiratory Failure
• Able to maintain adequate oxygenation by using extra effort to move air. • Signs include increased respiratory rate, sniffing position, nasal flaring, abnormal breath sounds, head bobbing, intercostal retractions, mild tachycardia.	• Hallmarks of respiratory failure are respiratory rate less than 20 breaths per minute for children <6 years old; less than 12 breaths per minute for children <16 years old; and >60 breaths per minutes for any child; cyanosis, marked tachycardia or bradycardia, poor peripheral perfusion, decreased muscle tone, and depressed mental status.
Respiratory distress in children and infants must be promptly recognized and aggressively treated as patient may rapidly decompensate.	

When a child tires and is unable to maintain adequate oxygenation, respiratory failure occurs and may lead to cardiac arrest.

Glasgow Coma Scale						
Motor Response	Score	Verbal Response	Verbal - Infants	Score	Eye Response	Score
Obeys commands/spontaneous	6	Oriented and alert	Babbles	5	Open	4
Localizes pain	5	Disoriented	Irritable	4	To voice	3
Withdraws to pain	4	Inappropriate words	Cries to pain	3	To Pain	2
Decorticate flexion	3	Moans, unintelligible	Moans	2	No response	1
Decerebrate extension	2	No response	No response	1		
No response	1					