



Patient Care Goals

Facilitate appropriate initial assessment and management of any EMS patient and apply appropriate specific guidelines as dictated by the findings within the universal care guideline

Patient Presentation

Inclusion Criteria: All patient encounters with and care delivery by EMS personnel

Exclusion Criteria: None

Patient Management

Assessment

1. Assess scene safety: evaluate for hazards to EMS personnel, patient, bystanders
 - a. Determine number of patients
 - b. Determine mechanism of injury
 - c. Request additional resources if needed
 - d. Consider declaration of mass casualty incident if needed
2. Use appropriate personal protective equipment
3. Consider spinal motion restriction if trauma
4. Primary Survey (**A**irway, **B**reathing, **C**irculation; **C**irculation, **A**irway, **B**reathing *if* major hemorrhage)
 - a. Airway: assess for patency and open the airway as indicated
 - i. Patient is unable to maintain airway patency
 1. Head tilt chin lift
 2. Jaw thrust
 3. Suction
 4. Consider use of the appropriate airway management adjuncts and devices
 - ii. Obstructed airway: manage per Airway Management and Foreign Body Obstruction guidelines.
 - b. Breathing
 - i. Evaluate rate, effort, breath sounds, accessory muscle use, retractions, patient positioning
 - ii. Administer oxygen as appropriate with a goal of > 94% oxygen saturation for most acutely ill patients
 - iii. Apnea or agonal breathing: manage per Airway Management guideline.
 - c. Circulation
 - i. Assess pulse
 1. If none: manage per Cardiac Arrest guideline
 2. Assess rate and quality of carotid and radial pulses
 - ii. Evaluate perfusion by assessing skin color and temperature
 2. Evaluate capillary refill
 1. Control any major external bleeding.
 - d. Disability
 - i. Evaluate patient responsiveness
 1. Assess Glasgow Coma Scale
 2. If patient is not alert or responsive to verbal stimuli, assess for response to painful stimuli
 - (a) Peripheral pain stimulus (preferred): firm pressure to trapezius muscle, nail bed, or earlobe
 - (b) Central pain stimulus: vigorous rubbing patient's sternum
 - ii. Evaluate gross motor and sensory function in all extremities



- iii. Evaluate blood glucose in patients with altered mental status
- iv. If acute stroke suspected, manage per guideline
- e. Expose patient as appropriate to complaint
 - i. Be considerate of patient modesty
 - ii. Keep patient warm

5. Secondary Survey

The performance of the secondary survey should not delay transport in critical patients.

Secondary surveys should be tailored to patient presentation and specific to individual chief complaints. The following are suggested considerations for secondary survey assessment:

- a. Head
 - i. Pupils
 - ii. Naso-oropharynx
 - iii. Skull and scalp
- b. Neck
 - i. Jugular venous distension
 - ii. Tracheal position
 - iii. Step offs
- c. Chest
 - i. Retractions
 - ii. Breath sounds
 - iii. Chest wall deformity
- d. Abdomen/Back
 - i. Flank/abdominal tenderness or bruising
 - ii. Abdominal distension
- e. Extremities
 - i. Edema
 - ii. Pulses
 - iii. Deformity
- f. Neurologic
 - i. Mental status/orientation
- g. Motor/sensory

6. Obtain baseline vital signs

- a. An initial full set of vital signs is required: pulse, blood pressure, respiratory rate, SPO2, neurologic status assessment. Neurologic status assessment involves establishing a baseline and LKW, plus trending any change in patient neurologic status.
- b. Patients with cardiac or respiratory complaints
 - i. Pulse oximetry
 - ii. 12-lead EKG should be obtained early in patients with cardiac complaints
 - iii. Continuous cardiac monitoring, if available
 - iv. Consider waveform capnography
- c. Patient with altered mental status
 - i. Assess blood glucose
 - ii. Consider waveform capnography



- d. Stable patients should have at least two sets of pertinent vital signs; ideally, one set should be taken shortly before arrival at receiving facility or immediately prior to transfer to another EMS unit.
- e. Critical patients should have pertinent vital signs frequently monitored (at least every 10 minutes if not otherwise indicated in a specific guideline)

7. Obtain OPQRST history:

- a. O: onset of symptoms
- b. P: provocation – location; any exacerbating or alleviating factors
- c. Q: quality of pain
- d. R: radiation of pain
- e. S: severity of symptoms - pain scale
- f. T: time of onset and circumstances around onset

8. Obtain SAMPLE history:

- a. S: symptoms
- b. A: allergies - medication, environmental, and foods
- c. M: medications - both prescription and over-the-counter; bring all containers to hospital if possible
- d. P: past medical history
 - i. look for medical alert tags, portable medical records, advance directives
 - ii. look for medical devices/implants: some common ones may be dialysis shunt, insulin pump, pacemaker, central venous access port, gastric tubes, urinary catheter
- e. L: last oral intake
- f. E: events leading up to the 911 call. In patient with syncope, seizure, altered mental status, or acute stroke, consider bringing witness to the hospital or obtain their contact phone number to provide to ED care team

Treatment and Interventions:

1. Oxygen supplementation if needed to reach target of > 94%
2. Place appropriate monitoring equipment as dictated by assessment. These may include
 - a. Continuous pulse oximetry
 - b. Cardiac rhythm monitoring
 - c. Waveform capnography
 - d. Carbon monoxide assessment
3. Establish vascular access if indicated (need for medication, need for fluid resuscitation) or in patients who are at risk for clinical deterioration based on paramedic judgement; routine placement of vascular access not encouraged unless indicated
4. Monitor pain scale if appropriate
5. Reassess patient

Patient safety considerations

1. Routine use of lights and sirens is not warranted
2. Be aware of legal issues and patient rights as they pertain to and impact patient care, e.g. patients with functional needs or children with special healthcare needs
3. Ensure adequate access to patient and advocate for access when barrier exists
4. Ensure appropriate equipment to perform all patient care guidelines



5. Be aware of potential need to adjust management based on patient age and/or comorbidities, including medication dosages
6. The maximum weight-based dose of medication administered to a pediatric patient should not exceed the maximum adult dose except where specifically stated in a patient care guideline
7. Online Medical Control should be contacted when mandated or as needed for specific consultation

Notes/Educational Pearls

Key considerations

1. Pediatrics: use a weight-based assessment tool (length-based tape or other system) to estimate patient weight and guide medication therapy and adjunct choice. Although the defined age varies by state, the pediatric population is generally defined by those patients who weigh up to 40 kg or up to 14 years of age, whichever comes first
2. Geriatrics: although the defined age varies by state, the geriatric population is generally defined as those patients who are 65 years old or more. In these patients, as well as all adult patients, reduced medication dosages may apply to patients with renal disease (i.e. on dialysis or a diagnosis of chronic renal insufficiency) or hepatic disease (i.e. severe cirrhosis or end-stage liver disease)
3. Co-morbidities: reduced medication dosages may apply to patients with renal disease (i.e. on dialysis or a diagnosis of chronic renal insufficiency) or hepatic disease (i.e. severe cirrhosis or end-stage liver disease)
4. Vital signs:
 - a. Oxygen
Goal oxygen saturation is > 94%. Supplemental oxygen administration is warranted to patients with oxygen saturations below this level and titrated based upon clinical condition, clinical response, and geographic location and altitude
 - b. Normal vital signs—see chart below
 - i. Hypotension is considered a systolic blood pressure less than the lower limit on the chart
 - ii. Tachycardia is considered a pulse above the upper limit on the chart
 - iii. Bradycardia is considered a pulse below the lower limit on the chart
 - iv. Tachypnea is considered a respiratory rate above the upper limit on the chart
 - v. Bradypnea is considered a respiratory rate below the lower limit on the chart
5. Secondary survey may not be completed if patient has critical primary survey problems
6. In critical patients, proactive patient management should occur simultaneously with assessment. Ideally, one provider should be assigned to exclusively monitor and facilitate patient-focused care. Treatment and Interventions should be initiated as soon as practicable, but should not impede extrication or delay transport to definitive care

Quality Improvement

Key Documentation Elements

1. At least two full sets of vital signs should be documented for every patient, **critical patients every 10 minutes**
2. All patient interventions should be documented

Performance Measures

1. Abnormal vital signs should be addressed and reassessed
2. Response to therapy provided should be documented including pain scale reassessment if appropriate
3. Limit scene time for patients with time-critical illness or injury unless clinically indicated



Normal Range Adult Vital Signs

Heart Rate	50-110
Respiratory Rate	12-16
Blood Pressure	90-220 systolic
End tidal CO2	35-45

Normal Range Pediatric Vital Signs

Heart Rate

Age	Awake Heart Rate	Sleeping Heart Rate
Newborn to 3 months	85-205	80-160
3 months to 2 years	100-190	75-160
2 years to 10 years	60-140	60-90
>10 year	60-100	50-90

Respiratory Rate

Age	Rate
Infant	30-60
Toddler	24-40
Preschooler	22-34
School Age	18-30
Adolescent	12-16

Blood Pressure of **HYPOTENSION** (Minimum SBP)

Age	Systolic BP mmHg
Term neonate (0 to 28 days)	<60
Infants (1 to 12 months)	<70
Children (1 to 10 years)	<70 + (Age in years x2)
Children > 10 years	<90



Temperature Range (rounded)

Hypothermia	Less than 97 F / 36 C
Hyperthermia including fever	Greater than 100.4 F / 38 C

Glasgow Coma Scale

ADULT GLASGOW COMA SCALE

Eye Opening (4)

Spontaneous	4
To Speech	3
To Pain	2
None	1

Best Motor Response (6)

Obeys Commands	6
Localizes Pain	5
Withdraws From Pain	4
Abnormal Flexion	3
Abnormal Extension	2
None	1

Verbal Response (5)

Oriented	5
Confused	4
Inappropriate	3
Incomprehensible	2
None	1

Total (15)

PEDIATRIC GLASGOW COMA SCALE

Eye Opening (4)

Spontaneous	4
To Speech	3
To Pain	2
None	1

Best Motor Response (6)

Spontaneous Movement	6
Withdraws to Touch	5
Withdraws from Pain	4
Abnormal Flexion	3
Abnormal Extension	2
None	1

Verbal Response (5)

Coos, Babbles	5
Irritable Cry	4
Cries to Pain	3
Moans to Pain	2
None	1

Total (15)