Emergency Department Services: Continuum Models for Asthma, Head Injury, and Laceration

The continuum model is a teaching tool that gives examples of how common conditions in the ED might be reported based on the severity and/or complexity of the presenting problem(s).

Following are 3 common conditions—asthma, head injury, and laceration—described across the continuum of codes **99281–99285** plus critical care. Although the actual assignment of a code for an individual patient may vary from the examples, members of the American Academy of Pediatrics Committee on Coding and Nomenclature generally agree that these examples provide an accurate representation of how 1 condition typically flows across the family of codes.

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| Continuum Model for Asthma |
| ***CPT* Code Vignette** | **History** | **Physical Examination (systems)** | **Medical Decision-making (1. diagnoses; 2. data; 3. risk)** |
| **99281**Stable asthma, out of medication | ***Problem focused***CC: asthma medication concernHPI: duration of medication use, no side effectsROS: constitutional, respiratory | ***Problem focused***Constitutional (vitals, general appearance) and respiratory systems (effort and auscultation) | ***Straightforward***1. Established problem, stable2. Asthma control test reviewed3. Anticipatory guidance with routine follow-up |
| **99282**Stable asthma, out of medication and noncustodial parent concerned about continuous use of control medication | ***Expanded problem focused***CC: out of asthma medicationHPI: stable but out of medication, no use of rescue inhalerROS: normal ENMT, infrequent nighttime cough, all others reviewed and normalPFSH: current medications reviewed, no hospitalizations | ***Expanded problem focused***Constitutional (height, weight, temperature), respiratory system (effort and auscultation), eyes, and ENMT (nasal and oral mucosa) | ***Low complexity***1. Established problem, stable2. Review and evaluation of asthma control test3. Alteration in medication regimen and/or refills |
| **99283**Known asthma with URI symptoms | ***Expanded problem focused***CC: asthma with stuffy nose and sinus pressureHPI: stuffy nose for 2 days, sinus pressure today, dry cough this afternoon relieved by inhalation treatmentROS: no fever; denies postnasal drip, shortness of breath, and wheezing; no body achesPFSH: current medications and allergies updated, asthma diagnosed in 2016, to ED twice last year for asthma symptoms | ***Expanded problem focused***Constitutional (temperature, weight, height, pulse oxygen), eyes, ENMT, respiratory (effort and auscultation), and other pertinent organ systems | ***Moderate complexity***1. Self-limited problem and 1 established problem with mild exacerbation or new problem with no additional workup2. Asthma control test, pulse oxygen3. ≥1 chronic illnesses with mild exacerbation, progression *or* side effects of treatment and/or prescription drug management |
| **99284**Known asthma with moderate exacerbation | ***Detailed***CC: shortness of breath, wheezingHPI: timing of symptom onset, context (exposure to flowers), modifying factors (used rescue inhaler and inhalation treatment at home), severity (worse than prior episodes)ROS: feels tired and scared, no fever, denies dizziness or fainting, no ear or throat pain, chest feels tight, no GI or GU complaintsPFSH: medications and allergies updated | ***Detailed***Constitutional (temperature, blood pressure, pulse oxygen, general appearance), ENMT, neck, respiratory, cardiovascular, and skin | ***Moderate complexity***1. New problem to examiner with or without additional workup planned2. Pulmonary function testing, chest radiograph3. Continuous or back-to-back inhalation treatments until improved |
| **99285**Known asthma with moderate to severe exacerbation and hypoxia | ***Comprehensive***CC: unable to catch breathHPI: duration and severity of symptoms, medications used, other signs and symptomsROS: constitutional, eyes, ENMT, respiratory, cardiovascular, and at least 5 more (all others reviewed and negative)PFSH: medications and allergies updated, no tobacco use or exposure | ***Comprehensive***Constitutional, eyes, ENMT, respiratory, cardiovascular, GI, neurologic, skin | ***High complexity***1. New problem, additional workup planned (Transfer to hospitalist for observation care.)2. Blood gases, pulse oxygen, pulmonary function testing, chest radiograph3. Severe exacerbation of chronic condition |
| **99291, 99292****Critical Care**Known asthma unstable with marked distress and (impending) respiratory failure |  |  | ***High complexity***1. Severe exacerbation with high probability of imminent or life-threatening deterioration requires >30 min of directed patient care.2. Assess, manipulate, and support vital system function(s) to treat respiratory failure and/or to prevent further life-threatening deterioration of the patient’s condition. (Usually requires use of additional therapies such as ketamine, magnesium sulfate, parenteral adrenergic agents, and/or heliox; ET intubation; or BiPAP.) |
| Abbreviations: BiPAP, bi-level positive airway pressure; CC, chief complaint; CPT, Current Procedural Terminology; ED, emergency department; ENMT, ear, nose, mouth, throat; ET, endotracheal; GI, gastrointestinal; GU, genitourinary; HPI, history of present illness; PFSH, past, family, and social history; ROS, review of systems; URI, upper respiratory infection. |

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| Continuum Model for Head Injury |
| ***CPT* Code Vignette** | **History** | **Physical Examination (systems)** | **Medical Decision-making (1. diagnoses; 2. data; 3. risk)** |
| **99281**Repaired scalp laceration, well healed, presents for suture removal | ***Problem focused***CC: suture removalHPI: wound repair 10 days ago, no complaints | ***Problem focused***Limited skin | ***Straightforward***1. Established problem, improved2. No tests ordered/reviewed3. Suture removal |
| **99282**Minor head trauma without local bruising, swelling, or laceration, no neurologic changes | ***Expanded problem focused***CC: bumped headHPI: context (injury mechanism), timing | ***Expanded problem focused***Examination of skin and neurologic system | ***Low complexity***1. New problem, no additional workup2. No tests ordered/reviewed3. Acute uncomplicated injury |
| **99283**Minor head trauma with local bruising, swelling, or laceration, no neurologic changes; GCS 15 | ***Expanded problem focused***CC: hit in headHPI: injury mechanism, timing, associated signs and symptomsROS: neurologic, musculoskeletal | ***Expanded problem focused***Eyes, ENMT, skin, and neurologic system | ***Moderate complexity***1. New problem, no additional workup2. No tests ordered/reviewed3. Acute complicated injury |
| **99284**Head trauma with signs of concussion | ***Detailed***CC: head injury with LOCHPI: mechanism of injury, associated signs and symptoms (pain, loss of recall), duration of LOC (<5 min), severity (no focal neurologic changes; GCS ≥13)PFSH: medications, allergies, past illnesses/injuries | ***Detailed***Eyes, ENMT, neck, respiratory, cardiovascular, skin, neurologic, and other pertinent systems | ***Moderate complexity***1. New problem, no additional workup planned.2. Radiology and laboratory tests may be obtained. Neurology or neurosurgical consultation may be obtained.3. Acute complicated injury. |
| **99285**Head trauma with signs of concussion including LOC (<5 min), brief seizure, and/or persistent emesis; closed skull fracture and/or focal neurologic changes may be present; GCS 9–12 | ***Comprehensive***CC: head trauma with LOCHPI: mechanism of injury, associated signs and symptoms (pain, emesis), duration of LOC (<5 min), severity (GCS 9–12)ROS: ≥10 systemsPFSH: medications, allergies, past illnesses/injuries, family or social history (eg, bleeding disorders, use of drugs or alcohol) | ***Comprehensive***Constitutional, eyes, ENMT, respiratory, cardiovascular, gastrointestinal, neurologic, skin | ***High complexity***1. New problem, no additional workup planned.2. History obtained from someone other than patient. Radiology and laboratory tests may be obtained/reviewed. Neurology or neurosurgical consultation may be obtained.3. Acute injuries that may pose a threat to life or bodily function. |
| **99291, 99292****Critical Care**Head trauma with persistent LOC and/or seizures; open or closed skull fracture and/or focal neurologic changes may be present; GCS ≤8 |  |  | ***High complexity***1. Critically ill, unstable patient; requires >30 min of directed patient care.2. Physician assesses, manipulates, and supports vital system function(s) to treat single or multiple vital organ system failure and/or to prevent further life-threatening deterioration of the patient’s condition. |
| Abbreviations: CC, chief complaint; CPT, Current Procedural Terminology; ENMT, ear, nose, mouth, throat; GCS, Glasgow Coma Scale; HPI, history of present illness; LOC, loss of consciousness; PFSH, past, family, and social history; ROS, review of systems. |

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| Continuum Model for LacerationThese codes reflect E/M services only and not any procedure the same physician may provide. The physician needs to be aware that the pre-procedural and intra-procedural global periods may include some of the medical decision-making indicated with each code, thus reducing the level of E/M service provided, and that any E/M service reported with a procedure must meet the requirement for a significant, separately identifiable service. |
| ***CPT* Code Vignette** | **History** | **Physical Examination (systems)** | **Medical Decision-making (1. diagnoses; 2. data; 3. risk)** |
| **99281**Repaired scalp laceration, well healed, presents for suture removal | ***Problem focused***CC: suture removalHPI: wound repair 10 days ago, no complaints | ***Problem focused*** Limited skin | ***Straightforward***1. Established problem, stable2. No tests ordered/reviewed3. Minimal risk—suture removal |
| **99282**Uncomplicated laceration of single body area or organ system | ***Expanded problem focused***CC: lacerationHPI: location, context (mechanism of injury), timingROS: skin or musculoskeletal | ***Expanded problem focused***Skin and/or musculoskeletal, neurologic systems | ***Low complexity***1. New problem, laceration2. No tests ordered/reviewed3. Acute uncomplicated injury |
| **99283**Uncomplicated laceration of single body area or organ system with minor associated injury (eg, minor head injury)*or*Uncomplicated lacerations of >1 body area or organ system*or*Minimally complicated laceration (eg, small foreign body, delay in seeking care) of single body area or organ system | ***Expanded problem focused***CC: laceration(s)HPI: location, context (mechanism of injury), timingROS: skin or musculoskeletal | ***Expanded problem focused***Constitutional, skin and/or musculoskeletal, neurologic systems | ***Moderate complexity***1. New problem(s).2. Radiograph of affected area may be ordered/viewed.3. Acute complicated injury. |
| **99284**Uncomplicated laceration of single body area or organ system with other associated injury (eg, mild concussion)*or*Minimally complicated lacerations (eg, small foreign body) of >1 body area or organ system*or*Complicated laceration (eg, infection, GSW, deep knife wound) of single body area or organ system without immediate threat to life or limb | ***Detailed***CC: injuriesHPI: location, context (mechanism of injury), timing, associated signs and symptomsROS: constitutional, skin, musculoskeletal, neurologicPFSH: medications and allergies | ***Detailed***Eyes, neck, respiratory, cardiovascular, skin, musculoskeletal, neurologic | ***Moderate complexity***1. New problem.2. Radiograph of affected area may be ordered/viewed.3. Acute complicated injury. |
| **99285**Uncomplicated laceration of ≥1 body area or organ system with significant associated injury (eg, multiple trauma)*or*Complicated laceration (eg, GSW, deep knife wound) of >1 body area or organ system without immediate threat to life or limb | ***Comprehensive***CC: injuriesHPI: location, context (mechanism of injury), timing, associated signs and symptomsROS: ≥10 systemsPFSH: medications, allergies, and pertinent family history of tobacco, alcohol, or substance use | ***Comprehensive***Constitutional, eyes, ENMT, respiratory, cardiovascular, musculoskeletal, neurologic, skin | ***High complexity***1. New problem2. Tests ordered/reviewed (radiology and/or laboratory)3. Acute injury that may pose a threat to life or bodily function or emergency major surgery |
| **99291, 99292****Critical Care**Uncomplicated or complicated laceration of ≥1 body area or organ system with significant associated injury (eg, multiple trauma) with immediate threat to life or limb |  |  | **High complexity**1. Critically ill, unstable patient; requires >30 min of directed patient care.2. Physician assesses, manipulates, and supports vital system function(s) to treat single or multiple vital organ system failure and/or to prevent further life-threatening deterioration of the patient’s condition. |
| Abbreviations: CC, chief complaint; CPT, Current Procedural Terminology; E/M, evaluation and management; ENMT, ear, nose, mouth, throat; GSW, gunshot wound; HPI, history of present illness; PFSH, past, family, and social history; ROS, review of systems. |