

General Recovery Care > Long-Term Acute Care Hospital (LTACH) General Recovery Guidelines > Long-Term Acute Care Hospital (LTACH) Level of Care Guideline (GRG-050)

Long-Term Acute Care Hospital (LTACH) Level of Care Guideline

GRG: GRG-050 (LTACH GRG)

MCG Health
General Recovery
Care
30th Edition

Note: An appropriate Optimal Recovery Guideline (ORG) should be identified and used whenever possible. This General Recovery Guideline (GRG) is intended to aid only in situations in which no ORG appears applicable.

- Care Planning - LTACH Admission and Alternatives
 - Clinical Indications for Admission to LTACH
 - Alternatives to Admission
- Hospitalization
 - General Recovery Course
 - Evaluation and Treatment
 - Discharge Criteria
- Discharge
 - Discharge Planning
 - Discharge Destination
- Evidence Summary
 - Background
 - Criteria
 - Rationale
 - Related CMS Coverage Guidance
- References
- Footnotes
- Definitions

Care Planning - LTACH Admission and Alternatives

Clinical Indications for Admission to LTACH

- Admission to LTACH may be indicated by **ALL** of the following(1)(2)(3)(4)(5):
 - ☐ Patient is stable for transfer to LTACH, as indicated by **ALL** of the following(12)(13):
 - Hypotension absent
 - Cardiovascular status acceptable
 - Stable chest findings
 - Renal function acceptable
 - Pain adequately managed
 - No acute severe unstable neurologic abnormalities (eg, obtundation, coma, evidence of ongoing CNS embolization or ischemia, worsening hydrocephalus)
 - No acute significant hepatic dysfunction (eg, hepatic encephalopathy that is moderate to severe,[A] severe coagulopathy)
 - No active bleeding or unstable disorders of hemostasis (eg, no recent need for transfusion, severe thrombocytopenia with bleeding)
 - Intake acceptable
 - Isolation needs (if present) manageable at next level of care
 - Long-term enteral feeding (eg, percutaneous endoscopic gastrostomy (PEG)) and IV access established, not needed, or to be placed at next level of care(17)
 - Treatment not limited to palliative measures (eg, hospice care not more appropriate)
 - Multidisciplinary assessment is documented and supports expectation that patient will benefit from LTACH care available at chosen facility (ie, improve such that LTACH level of care is no longer necessary).[B](19)(20)(21)(22)(23)(24)
- ☐ Interdisciplinary LTACH care is appropriate for condition, as indicated by medically complex situation, including comorbidities that will require ongoing acute care and complex nursing needs and close (ie, daily) physician supervision, as indicated by **1 or more** of the following(7)(25)(26)(27)(28)(29):
 - Respiratory failure requiring ventilation management and weaning. See Ventilator Management Long-Term Acute Care Hospital (LTACH) Guideline [GRG](#).

- Infectious disease condition requiring LTACH care (eg, endocarditis requiring long-term IV antibiotics and acute care and monitoring for unstable features such as recurring embolic phenomenon, or heart failure requiring daily adjustment and monitoring of diuretic therapy, fluids, and electrolytes)(7)(30)(31)
- Complex wound care condition requiring LTACH care (eg, large wound with necrosis requiring daily physician supervision, high-output fistula requiring fluid and electrolyte replacement)(7)(32)(33)
- Cardiovascular condition requiring LTACH care (eg, heart failure with pulmonary hypertension requiring long-term IV vasodilator therapy; heart failure with need for IV vasoactive drugs (eg, dobutamine); need for continued support with high-concentration oxygen (greater than 40%); daily adjustment and monitoring of diuretic therapy, fluids, and electrolytes)(34)
- Other complex medical management situation requiring LTACH care (eg, diabetic peripheral vascular disease with surrounding cellulitis unresponsive to standard IV antibiotic course that requires long-term IV antimicrobial therapy with daily monitoring and adjustment of diabetes treatment and skin condition, chest tube management for persistent air leaks, traumatic brain injury with polytrauma)(7)(35)
- Clinical assessment indicates expectation that patient will require long-term acute care and be in population subgroup that averages a length of stay greater than 25 days at an LTACH (eg, more rapid recovery not expected).[C]
- ☐ LTACH more appropriate than other levels of care (eg, skilled nursing facility, home healthcare), as indicated by **1 or more** of the following:
 - Clinical management needed beyond capabilities of alternative levels of care (eg, too frequent)
 - Frequent diagnostic services needed, including clinical assessment, laboratory, and imaging (ie, beyond capabilities of alternative levels of care)
 - More intensive skilled services (eg, specialty nursing care, on-site physician assessments) needed than available at lower level of care
 - Lower level of care has failed (eg, patient readmitted to acute care from lower level of care).

Alternatives to Admission

- Alternatives include(1)(2)(32):
 - Recovery care (eg, inpatient rehabilitation facility, subacute or skilled care)(25)(26)(27)(36)(37)
 - Home healthcare (eg, home health wound care, medication administration, ambulatory mechanical circulatory support)(34)
 - Palliative care, including formal hospice enrollment (eg, 6 to 12 months' life expectancy)(38)

Hospitalization

General Recovery Course

Stage	Level of Care	Clinical Status	Interventions
1	• LTACH care • Social Determinants of Health Assessment • Discharge planning. See Discharge Planning section in this guideline.	• Clinical Indications met	• Inpatient interventions, as needed[D] • Influenza vaccine, if appropriate
2	• LTACH care • Social Determinants of Health Assessment	• Clinical status improving	• Transition to discharge regimen • Optimize level of function • Psychosocial assessment and management
3	• Activity level acceptable • Social Determinants of Health Assessment • Floor to discharge • Complete discharge planning. See Discharge Planning section in this guideline.	• Hemodynamic stability • Cardiovascular status acceptable • Respiratory status acceptable • Stable chest findings • Airway status acceptable • No chest tube, or status acceptable • Temperature status acceptable • No infection, or status acceptable • Renal function acceptable • Pain and nausea absent or adequately managed • Vascular, soft tissue, and wound status acceptable	• Intake acceptable • Inpatient interventions not needed

- **Hepatic and biliary abnormalities absent or acceptable**
- **Neurologic status acceptable**
- **Abdominal status acceptable**
- **Urinary status acceptable**
- **Physiologic disorders absent, or status acceptable**
- **Electrolyte status acceptable**
- **No blood loss, or problem resolved**
- **Behavioral health status acceptable**

(1)(2)(29)(32)(43)(44)(45)(46)

Recovery Milestones are indicated in **bold**.

Evaluation and Treatment

- Common treatments and tests include(7)(32)(47):
 - Bronchodilators, steroids, or chest physiotherapy(48)
 - Noninvasive ventilation(49)
 - Parenteral medication (eg, antibiotics)(48)
 - Enteral (preferred) or parenteral nutrition
 - Evaluation of swallowing function (eg, barium swallow or fiberoptic evaluation)
 - Imaging (as indicated)
 - Laboratory tests (as indicated)
 - Surveillance testing for infection(40)(41)
 - Infection prevention program(39)(40)
 - Delirium prevention and treatment
 - Pressure injury prevention program(42)
- Commonly scheduled interventions include(7)(29):
 - Pulmonary consultation
 - Infectious disease consultation
 - Nutrition consultation(17)(50)
 - Speech-language pathology consultation (eg, for speech and swallowing evaluation)(51)
 - Palliative care consultation(52)(53)
 - Vision correction(54)
 - Physical therapy(55)
 - Respiratory therapy(56)
 - Protocol-driven weaning from mechanical ventilation(57)
 - Dialysis
 - Electromyogram and nerve conduction studies to evaluate for critical illness neuromyopathy
 - Wound care

Discharge Criteria

- Continued LTACH stay is indicated until **1 or more** of the following are present(26)(27)(32)(36)(44):
 - Acceptable patient status for next level of care is achieved.
 - **ALL** of the following are present:
 - ☐ Hemodynamic stability, as indicated by **1 or more** of the following:
 - Hemodynamic abnormalities at baseline or acceptable for next level of care
 - Patient hemodynamically stable, as indicated by **ALL** of the following(58)(59):
 - Tachycardia absent
 - Hypotension absent
 - No evidence of inadequate perfusion (eg, no myocardial ischemia)
 - No other hemodynamic abnormalities (eg, no Orthostatic hypotension)
 - ☐ Cardiovascular status acceptable, as indicated by **ALL** of the following:
 - Cardiac rhythm acceptable, as indicated by **1 or more** of the following(60):
 - Normal sinus or paced rhythm
 - Sinus arrhythmia or supraventricular arrhythmia (eg, atrial fibrillation) with ventricular rate controlled, and no need for cardioversion(61)
 - No severe cardiac arrhythmias noted (eg, sustained ventricular tachycardia, ventricular fibrillation)(60)

- No severe cardiac or peripheral ischemia(62)(63)
- Heart failure or other cardiovascular disease is **1 or more** of the following(64):
 - Not present
 - At baseline
 - Manageable at next level of care
- [-] Respiratory status acceptable, as indicated by **ALL** of the following(65)(66)(67)(68):
 - Patient breathing comfortably (or near baseline) and able to protect airway (eg, able to handle secretions)
 - Tachypnea absent
 - Oxygen saturation greater than 90%, near baseline, or measurement not indicated for condition
 - Supplemental oxygen or respiratory treatments not needed or are performable at next level of care
 - Airflow measurements greater than 60% of predicted, at stable baseline, or measurement not indicated for condition
 - Partial pressure of carbon dioxide and pH normal, at stable baseline, or measurement not indicated for condition
- [-] Stable chest findings over past 24 hours, as indicated by **ALL** of the following(69):
 - Pleural effusion absent or stable for treatment at next level of care(70)
 - No stridor or gross hemoptysis
 - Pneumothorax absent or stable for treatment at next level of care(71)(72)
 - Postoperative changes (if present) stable for next level of care
 - No evidence of new infection or other chest complications
- [-] Airway status acceptable, as indicated by **1 or more** of the following(73)(74)(75)(76):
 - Patient extubated, breathing adequately, and able to protect airway (eg, able to handle secretions)
 - Stable tracheostomy (eg, more than 48 hours old) in place
- [-] No chest tube, or status acceptable, as indicated by **1 or more** of the following(77)(78)(79)(80):
 - No chest tube
 - Chest catheter management established for next level of care
- [-] Temperature status acceptable, as indicated by **1 or more** of the following(81)(82)(83):
 - Temperature less than 100.5 degrees F (38.1 degrees C) (oral) and greater than 96.8 degrees F (36 degrees C) (rectal)
 - Temperature as expected for disease process and appropriate for management at next level of care
- [-] No infection, or status acceptable, as indicated by **1 or more** of the following(82)(83)(84)(85)(86):
 - No infection present
 - Infection status acceptable for next level of care, as indicated by **ALL** of the following(87):
 - WBC count normal, stable, or declining with treatment
 - Adequate treatment performable at next level of care
 - Organism and sensitivities identified, or adequate clinical response to empiric therapy
 - Repeat cultures negative or not needed
- [-] Renal function acceptable, as indicated by **1 or more** of the following(88)(89)(90):
 - Renal function normal (GFR of 90 mL/min/1.73m² (1.50 mL/sec/1.73m²) or more)  eGFR - Adult Calculator  eGFR - Pediatric Calculator
 - Renal function that is **ALL** of the following:
 - Impaired (estimated GFR less than 90 mL/min/1.73m² (1.50 mL/sec/1.73m²)) but stable or improving  eGFR - Adult Calculator  eGFR - Pediatric Calculator
 - Appropriate for management at next level of care
 - Renal function at baseline and appropriate for management at next level of care
 - Dialysis needed and performable at next level of care
- [-] Pain and nausea absent or adequately managed, as indicated by **1 or more** of the following(91)(92)(93)(94)(95):
 - No pain or nausea
 - Minimal discomfort on oral medications
 - Pain and nausea managed on regimen performable at next level of care
- [-] Vascular, soft tissue, and wound status acceptable, as indicated by **1 or more** of the following(96)(97)(98)(99):
 - No vascular, soft tissue, or wound problems
 - Status acceptable, as indicated by **ALL** of the following:
 - No significant ischemia
 - No Bacteremia
 - No evidence of compartment syndrome
 - Neuromotor function at baseline or expected level of recovery and appropriate for management at next level of care
 - No new wound dehiscence or hematoma that cannot be managed at next level of care
 - Tissue necrosis absent, or treatment plan appropriate for next level of care
 - Vascular, soft tissue, and wound management appropriate for next level of care

- ☐ Hepatic and biliary abnormalities absent or acceptable, as indicated by **1 or more** of the following(100)(101)(102):
 - No abnormalities present
 - Hepatic and biliary status acceptable for next level of care, as indicated by **ALL** of the following:
 - Liver function tests normal, stable, or improving
 - Ascites absent, diminishing, or stable, with adequate respiratory function for next level of care
 - Renal function acceptable
 - Bilirubin stable or diminishing
 - Encephalopathy absent or controlled adequately for next level of care
 - No biliary obstruction, or current drainage and treatment plan appropriate for next level of care
- ☐ Neurologic status acceptable, as indicated by neurologic function and mental status being **1 or more** of the following(103)(104):
 - Normal
 - Baseline
 - Appropriate for next level of care
- ☐ Abdominal status acceptable, as indicated by **ALL** of the following(105):
 - Bowel sounds present
 - No ileus, signs of obstruction, or peritonitis
 - Abdominal distention absent or manageable at next level of care
- ☐ Urinary status acceptable, as indicated by **1 or more** of the following(106)(107):
 - Adequate spontaneous voiding (eg, no severe urinary retention)
 - Urinary catheter and management regimen in place that is performable at next level of care
- ☐ Physiologic disorders absent, or status acceptable, as indicated by **1 or more** of the following(108)(109):
 - Physiologic disorders absent
 - Physiologic disorders controlled, as indicated by **ALL** of the following(110):
 - Glucose less than 250 mg/dL (13.88 mmol/L) or near baseline
 - No hypoglycemia(111)(112)(113)
 - pH normal or at stable baseline(114)(115)
 - Dehydration, volume depletion, vomiting, or anasarca absent or adequately controlled for next level of care(116)
- ☐ Electrolyte status acceptable, as indicated by **1 or more** of the following(117):
 - Electrolyte abnormality manageable at next level of care[E]
 - No electrolyte abnormality, as indicated by **ALL** of the following:
 - Potassium greater than 3.5 mEq/L (mmol/L) and less than 5.0 mEq/L (mmol/L)(118)
 - Sodium greater than 135 mEq/L (mmol/L) and less than 145 mEq/L (mmol/L)(116)(119)
 - Calcium[F] greater than 8.5 mg/dL (2.13 mmol/L) and less than 10.5 mg/dL (2.63 mmol/L)
 - Phosphorus greater than 2.5 mg/dL (0.81 mmol/L) and less than 5.0 mg/dL (1.62 mmol/L)(122)
 - Magnesium greater than 1.5 mEq/L (0.75 mmol/L) and less than 3.0 mEq/L (1.5 mmol/L)(122)
- ☐ No blood loss, or problem resolved, as indicated by **1 or more** of the following(123)(124)(125)(126):
 - No blood loss problem
 - Repeat evaluation shows blood loss resolved sufficiently (eg, hemoglobin at acceptable level and stable)
- ☐ Behavioral health status acceptable, as indicated by **1 or more** of the following:
 - No behavioral health issues
 - Behavioral health issues manageable at next level of care, as indicated by **ALL** of the following(127)(128)(129)(130):
 - Current functional status manageable at next level of care
 - Current behaviors manageable at next level of care(131)
 - Risk of danger to self or others absent or manageable at next level of care(132)(133)(134)
 - Substance misuse, withdrawal problems, or withdrawal management program needs absent or manageable at next level of care(135)(136)(137)
- ☐ Activity level acceptable, as indicated by **1 or more** of the following:
 - Patient ambulatory and can perform ADL as appropriate for age and development
 - Activity at baseline
 - Activity level acceptable for next level of care
- ☐ Intake acceptable, as indicated by **1 or more** of the following(138):
 - Oral hydration, medications, and diet
 - Enteral hydration, medications, and diet
 - Administration routes performable at next level of care
- ☐ Inpatient interventions not needed; examples include:
 - Stat testing
 - Frequent vital signs, neurologic signs, or vascular checks not performable at next level of care
 - Cardiac monitoring
 - IV vasoactive agent or inotropic agent

- Frequent respiratory therapy suctioning, pulmonary toilet, or other therapy that is not performable at next level of care
- Procedure that is not available at next level of care (eg, biopsy, radiology-guided drainage, placement of central port)

Discharge

Discharge Planning

- Initiate discharge planning at admission(26)(27)(32)(36)(44)(139)(140)(141):
 - Elements determined by multidisciplinary team
 - Discharge plan written and accessible to all team members, including patient and family
 - Expected outcomes identified
 - Timeline included
 - Anticipate decisions regarding:
 - Optimal site for discharge
 - If discharged to home, how to ensure patient's safety and stability
 - Financial and insurance coverage for alternative sites
 - Appropriate members of discharge team, including patient and family
- Evaluate clinical status:
 - Medical conditions
 - Cardiac
 - Hemodynamic
 - Respiratory, including respiratory rate, coughing, wheezing, sputum production, severity of dyspnea, evidence of retraction, hypoxemia, hypercapnia, or respiratory acidosis
 - Neuropsychiatric, including confusion, lethargy, anxiety, restlessness, insomnia, or coma
 - Fluid balance
 - Nutritional status
 - Signs of infection
- Identify respiratory and ventilatory support required(48):
 - Establish discontinuation plan and timeline.
 - Requirements include:
 - Type, method of application, and duration of mechanical ventilation
 - Oxygen therapy
 - Aerosol therapy
 - Airway clearance therapy
 - Monitoring and diagnostic procedures
- Identify continuing requirements for care:
 - Pain management plan. See Pain Management [SR](#).
 - IV fluids, antibiotics, and medication
 - Deep venous thrombosis prophylaxis
 - Management of complications and comorbidities (eg, diabetes, hypertension)
 - Nutrition and fluid management
 - Wound management. See Wounds Due to Surgery, Injury, or Pressure [SR](#).
 - Rehabilitation(142)
 - Ability to perform ADL and IADL. See Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) Assessment [SR](#).
 - Gait training, occupational therapy, and physical therapy
 - Cognitive therapy
 - Speech therapy
 - Need for and availability of assistive devices
 - Ability to continue rehabilitation on outpatient basis
- Identify and evaluate site for continuing care[G]:
 - Establish patient's long-term goals and needs.
 - Evaluate ability of facility to:
 - Meet ventilatory and respiratory needs
 - Provide care for medical conditions
 - Provide 24-hour coverage
 - Provide therapies and rehabilitation
 - Evaluate safety of facility for patient's care.
 - If on home ventilation(143):
 - Establish nutritional route.
 - Stabilize ventilator settings.

- Arrange home and environment to minimize exertion.
- Assess home safety (see Home Safety Assessment [SR](#)):
 - Home ventilator equipment is safe for home use:
 - Adequate electrical wiring
 - Ventilator alarm system
 - Smoking prohibited or permitted only in appropriate locations
 - Contingency plans for power failure
 - Durable medical equipment company ensures rapid response to equipment failure and routine maintenance.
 - Safe storage and regular inventory of oxygen supply
 - Fire detector
 - Family and caregiver demonstrate ability to manage equipment.
 - Family and caregiver demonstrate ability to manage care, including:
 - Suctioning secretions
 - Tracheostomy
 - Oxygen
 - Assistance with ADL and IADL, transfers, and ambulation
 - Use of air filter
- Assess psychosocial factors and schedule referrals (see Psychosocial Assessment [SR](#)):
 - Financial resources
 - Preferences of patient and family for treatment and advance directives
 - Anxiety, irritability, or restlessness
 - Depression, helplessness, or hopelessness
 - Negative self-image
 - Need for change in lifestyle and social and family roles
 - Need for coping skills training
 - Need for relaxation techniques
 - Adequacy of social support for patient, family, and caregiver, including:
 - Characteristics of caregiver and ability to tolerate prolonged stress
 - Need for support or referrals to community agencies
 - Language or communication problems
 - Transportation to facility or for follow-up care
 - Behavioral problems or impaired cognition, including:
 - Difficulty communicating and memory problems
 - Abusive, inappropriate, delusional, hallucinating, resistant, or wandering behaviors
- Ensure that follow-up care and referrals to specialists are scheduled:
 - Refer to disease management program, as appropriate and available.
- Ensure durable medical equipment is available:
 - Ramps and handrails
 - Bathroom equipment, including grab bars and shower seat
 - Specialty bed
 - Wheelchair, walker, or other ambulatory device
 - Wound care supplies and equipment
 - Suction
 - Communication system or devices
 - Nebulizer
 - Oxygen and catheters
 - Weight scale
 - Blood pressure equipment
 - Alternative source of power
- If patient requires high-technology equipment(34):
 - Assess capability of facility to provide equipment and safe appropriate care.
 - Assess home safety (see Home Safety Assessment [SR](#)):
 - Adequate electrical wiring
 - Contingency plans for power failure
 - Durable medical equipment company ensures rapid response to equipment failure and routine maintenance.
 - Safe storage and regular inventory of oxygen supply
 - Fire detector
 - Ensure that family and caregiver are able to manage equipment.
- Ensure that family and caregiver are able to manage care, including assistance with ADL and IADL, transfers, and ambulation.
- Assess knowledge and understanding of patient, family, and caregiver about condition and treatment.
- Complete patient, family, and caregiver education (see Education: Patient, Family, and Caregiver [SR](#)):

- o Requirements of facility and continued involvement in patient care, if not discharged to home
- o How to manage complications and comorbidities
- o How to perform ADL and IADL, with assistance and limitations
- o How to manage pain
- o Safety factors
- o Medication administration, side effects, drug and food interactions, and allergic reactions
- o Nutrition and fluid requirements
- o Measures to promote adequate sleep
- o How to use oxygen and other equipment safely
- o How to manage wounds, if present
- o How to seek relief from demands of caregiving
- o Plan for emergency measures
- o Follow-up care and referrals
- o How to recognize signs and symptoms of complications and when to seek medical intervention

Discharge Destination

- Post long-term acute care hospital (LTACH) levels of admission may include:
 - o Home.
 - o Home healthcare. See indications for admission to home healthcare in Alternatives to Admission section in this guideline.
 - o Recovery facility care. See indications for admission to recovery facility care in Alternatives to Admission section of this guideline.

Evidence Summary

Background

Long-term acute care hospitals (LTACHs) are designed for the care of patients who, while clinically stable enough to not require ongoing critical care at a short-stay acute care hospital (eg, ICU care), do require a level of care (wound care, nursing care, daily physician oversight) that is beyond the capability of other levels of post-acute care such as a skilled nursing facility.(1)(2)(6) **(EG 2)** LTACH care is designed to apply to patients with this level of care need who are not expected to improve quickly; specifically, LTACHs are expected to have an average length of stay of greater than 25 days for Medicare patients (Medicare patients account for approximately 2/3 of LTACH patients).(1)(2)(6) **(EG 2)** The target population is chronically severely ill patients who have the potential for improvement, but this improvement is expected to take several weeks to occur, and the intensity and specialization of care required is beyond that provided in a post-acute care setting (eg, skilled nursing facility, home healthcare, inpatient rehabilitation facility).(1)(2)(6) (7)(8)(9) **(EG 2)** A database analysis of 6248 patients hospitalized with COVID-19 at one of 12 hospitals found that 0.8% were discharged to an LTACH.(10) **(EG 2)** Analysis of national hospital discharge data shows that less than 1% of adult patients hospitalized for one of the following primary diagnoses are discharged to an LTACH: cellulitis, heart failure, myocardial infarction, pneumonia, COPD, pulmonary embolism, acute viral illness, liver disease, traumatic brain injury subarachnoid hemorrhage, ischemic stroke, and major burn.(11) **(EG 3)** In the same analysis, hospitalized adult patients were discharged to an LTACH at the following rates: COVID-19 (1.0%), hemorrhagic stroke (1.1%), osteomyelitis (1.9%), infective endocarditis (2.8%), and pressure injury closure by musculocutaneous or free flap (5.5%).(11) **(EG 3)**

Criteria

The evidence for the clinical indications found in this guideline includes 23 published peer reviewed articles, 3 specialty society or other evidence-based guidelines, and 2 book sections.

Rationale

Use of this Long-Term Acute Care Hospital (LTACH) MCG care guideline helps the clinician identify patient-specific complex clinical factors that make it reasonable to expect a necessity for LTACH care across 2 or more midnights. The evidence-based clinical criteria assist the clinician in the decision to appropriately admit a patient to LTACH care.

Use of these evidence-based clinical criteria to support decision making around the need for LTACH care is of clinical benefit to the patient and is crucial for quality patient care. Use of evidence-based clinical criteria ensures patients receive the most appropriate care for their specific condition, reduces unnecessary risks, promotes recovery, and provides a standard that can reduce disparities in care. Evidence-based clinical criteria not only help align treatment decisions with best practice, but they can also help reduce unwarranted variation in care by fostering consistency and equality in healthcare provision across regions and facilities. Appropriate use of the evidence-based clinical criteria ensures Medicare patients receive full access to Medicare benefits (eg, LTACH care), without risk of delay or decreased access, based on variables such as clinical severity of illness, length of provision of medically necessary LTACH-level care, or satisfaction of specified Medicare criteria as directed by CMS. Use of these criteria will help ensure that the patient receives necessary care in the appropriate setting.

Related CMS Coverage Guidance

This guideline supplements but does not replace, modify, or supersede existing Medicare regulations or applicable National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Code of Federal Regulations (CFR): 42 CFR 412.3(144); 42 CFR 419.22(145); 42 CFR 422.101(146)

Internet-Only Manual (IOM) Citations: CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 1 - Inpatient Hospital Services Covered Under Part A(147); CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 6 - Hospital Services Covered Under Part B(148); CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 15 - Covered Medical and Other Health Services(149); CMS IOM Publication 100-08, Medicare Program Integrity Manual, Chapter 6, Section 6.5 - Medical Review of Inpatient Hospital Claims for Part A Payment(150)

Medicare Coverage Determinations: Medicare Coverage Database(151)

References

- Centers for Medicare and Medicaid Services. Medicare and Medicaid Programs and the Children's Health Insurance Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and Policy Changes and Fiscal Year 2025 Rates; Quality Programs Requirements; and Other Policy Changes. [Internet] U.S. Government. 2024 May Accessed at: <https://www.federalregister.gov/>. [accessed 2025 Sep 17] [Context Link 1, 2, 3, 4, 5, 6, 7]
- Medicare Payment Policy. Chapter 8 Long-Term Care Hospital Services [Internet] Medpac. 114-124; 2024 Jul Accessed at: <https://www.medpac.gov/>. [accessed 2025 Sep 12] [Context Link 1, 2, 3, 4, 5, 6, 7]
- Makam AN, Nguyen OK, Xuan L, Miller ME, Halm EA. Long-term acute care hospital use of non-mechanically ventilated hospitalized older adults. *Journal of the American Geriatrics Society* 2018;66(11):2112-2119. DOI: 10.1111/jgs.15564. [Context Link 1] View abstract...
- Mayer RS, Noles A, Vinh D. Determination of postacute hospitalization level of care. *Medical Clinics of North America* 2020;104(2):345-357. DOI: 10.1016/j.mcna.2019.10.011. [Context Link 1] View abstract...
- Schumacher RC, Chiu M, de Leon J, Krause K, Makam AN. Appropriateness of long-term acute care hospital transfer: a multicenter study of Medicare ACO beneficiaries. *Journal of the American Medical Directors Association* 2021;22(8):1767-1771 e5. DOI: 10.1016/j.jamda.2021.01.067. [Context Link 1] View abstract...
- Long-Term Care Hospitals Payment System. Payment Basics [Internet] Medpac. 2024 Oct 25 Accessed at: <https://www.medpac.gov/document-type/payment-basic/>. [accessed 2025 Apr 08] [Context Link 1, 2, 3, 4]
- Finn A, et al. Management of the Patient with Chronic Critical Illness - Part 1: This is part one of a two part series. Part two will be published in September. *Journal of Community Hospital Internal Medicine Perspectives* 2022;12(4):28-33. DOI: 10.55729/2000-9666.1065. [Context Link 1, 2, 3, 4, 5, 6, 7] View abstract...
- Jenkins H, et al. Predictors and outcomes of discharge to long-term acute care facilities after cardiac surgery. *Journal of Thoracic and Cardiovascular Surgery* 2024;Online. DOI: 10.1016/j.jtcvs.2024.01.029. [Context Link 1] View abstract...
- Likhvantsev VV, Berikashvili LB, Yadgarov MY, Yakovlev AA, Kuzovlev AN. The tri-steps model of critical conditions in intensive care: introducing a new paradigm for chronic critical illness. *Journal of Clinical Medicine* 2024;13(13):Online. DOI: 10.3390/jcm13133683. [Context Link 1] View abstract...
- Ikramuddin F, et al. Predictors of discharge disposition and mortality following hospitalization with SARS-CoV-2 infection. *PLoS ONE* 2023;18(4):Online. DOI: 10.1371/journal.pone.0283326. [Context Link 1] View abstract...
- Premier PINC AI™ Healthcare Database (PHD), 01/01/2023-12/31/2024. Premier, Inc. [Context Link 1, 2]
- Singer M, et al. The Third International Consensus definitions for sepsis and septic shock (Sepsis-3). *Journal of the American Medical Association* 2016;315(8):801-810. DOI: 10.1001/jama.2016.0287. [Context Link 1] View abstract...
- Evans L, et al. Surviving sepsis campaign: international guidelines for management of sepsis and septic shock 2021. *Intensive Care Medicine* 2021;47(11):1181-1247. DOI: 10.1007/s00134-021-06506-y. [Context Link 1] View abstract...
- Bajaj JS, et al. Acute-on-chronic liver failure clinical guidelines. *American Journal of Gastroenterology* 2022;117(2):225-252. DOI: 10.14309/ajg.0000000000001595. [Context Link 1] View abstract...
- Allampati S, Mullen KD. Hepatic encephalopathy. In: Friedman LS, Martin P, editors. *Handbook of Liver Disease*. 4th ed. Philadelphia, PA 19103-2899: Elsevier; 2018:207-216. [Context Link 1]
- American Association for the Study of Liver Diseases, European Association for the Study of the Liver. Hepatic encephalopathy in chronic liver disease: 2014 practice guideline by the European Association for the Study of the Liver and the American Association for the Study of Liver Diseases. *Journal of Hepatology* 2014;61(3):642-659. DOI: 10.1016/j.jhep.2014.05.042. (Reaffirmed 2025 Jun) [Context Link 1] View abstract...
- Adams SC, et al. Safe care transitions for patients receiving parenteral nutrition. *Nutrition in Clinical Practice* 2022;37(3):493-508. DOI: 10.1002/ncp.10861. [Context Link 1, 2] View abstract...
- Jain S, et al. Survival, function, and cognition after hospitalization in long-term acute care hospitals. *JAMA Network Open* 2024;7(5):Online. DOI: 10.1001/jamanetworkopen.2024.13309. [Context Link 1, 2, 3, 4, 5] View abstract...
- Babar A, Eilenfeld K, Alqaisi S, MohamedElfadil M, Al-Jaghbeer MJ. Incorporating early palliative medicine consultation into daily morning huddle in the ICU. *Critical Care Explorations* 2021;3(7):e0459. DOI: 10.1097/CCE.0000000000000459. [Context Link 1] View abstract...
- Makam AN, Tran T, Miller ME, Xuan L, Nguyen OK, Halm EA. The clinical course after long-term acute care hospital admission among Ooder Medicare beneficiaries. *Journal of the American Geriatrics Society* 2019;67(11):2282-2288. DOI: 10.1111/jgs.16106. [Context Link 1] View abstract...

21. Dubin R, Veith JM, Grippi MA, McPeake J, Harhay MO, Mikkelsen ME. Functional outcomes, goals, and goal attainment among chronically critically ill long-term acute care hospital patients. *Annals of the American Thoracic Society* 2021;18(12):2041-2048. DOI: 10.1513/AnnalsATS.202011-1412OC. [Context Link 1] View abstract...
22. Andersen SK, et al. Achieving goals of care decisions in chronic critical illness: a multi-institutional qualitative study. *Chest* 2024;166(1):107-117. DOI: 10.1016/j.chest.2024.02.015. [Context Link 1] View abstract...
23. Henderson CM, Boss RD. Establishing goals of care in serious and complex pediatric illness. *Pediatric Clinics of North America* 2024;71(1):71-82. DOI: 10.1016/j.pcl.2023.08.008. [Context Link 1] View abstract...
24. Kruser JM, et al. Defining the time-limited trial for patients with critical illness: an official American Thoracic Society Workshop Report. *Annals of the American Thoracic Society* 2024;21(2):187-199. DOI: 10.1513/AnnalsATS.202310-925ST. [Context Link 1] View abstract...
25. Centers for Medicare and Medicaid Services. "Criteria for 'practical matter'." 42 CFR Pt. 409.35 Washington, DC 2023 Oct [accessed 2025 Jul 22] Accessed at: <https://www.ecfr.gov/>. [Context Link 1, 2]
26. Centers for Medicare and Medicaid Services. "Criteria for skilled services and the need for skilled service." 42 CFR Pt. 409.32 Washington, DC 2023 Oct 02 [accessed 2025 Jul 22] Accessed at: <https://www.ecfr.gov/>. [Context Link 1, 2, 3, 4]
27. Centers for Medicare and Medicaid Services. "Skilled services requirements." 42 CFR Pt. 409.44 Washington, DC 2023 Oct 02 [accessed 2025 Jul 23] Accessed at: <https://www.ecfr.gov/>. [Context Link 1, 2, 3, 4]
28. Kaufman EJ, Zebrowski AM, Holena DN, Loher P, Wiebe DJ, Carr BG. The short and the long of it: timing of mortality for older adults in a state trauma system. *Journal of Surgical Research* 2021;268:17-24. DOI: 10.1016/j.jss.2021.06.042. [Context Link 1] View abstract...
29. Brakenridge S, Kornblith L, Cuschieri J. Multiple organ failure: What you need to know. *Journal of Trauma and Acute Care Surgery* 2024;Online. DOI: 10.1097/TA.0000000000004419. [Context Link 1, 2, 3] View abstract...
30. Otto CM, et al. 2020 ACC/AHA guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation* 2020;143(5):e35-371. DOI: 10.1161/CIR.0000000000000923. (Reaffirmed 2025 Mar) [Context Link 1] View abstract...
31. Geurkink S, Cler L. Spontaneous pneumothorax secondary to chronic cavitary pulmonary histoplasmosis. *Journal of Community Hospital Internal Medicine Perspectives* 2020;10(5):483-487. DOI: 10.1080/20009666.2020.1797285. [Context Link 1] View abstract...
32. Padilla PL, Khoo KH, Ho T, Cole EL, Sirvent RZ, Phillips LG. Plastic surgery. In: Townsend CM, Beauchamp RD, Evers BM, Mattox KL, editors. *Sabiston Textbook of Surgery*. 21st ed. Elsevier; 2022:1916-1944. [Context Link 1, 2, 3, 4, 5, 6]
33. Demiralp B, Soltoff S, Koenig L. Hospital patients with severe wounds: early evidence on the impact of Medicare payment changes on treatment patterns and outcomes. *Journal of Medical Economics* 2019;22(3):266-272. DOI: 10.1080/13696998.2018.1559599. [Context Link 1] View abstract...
34. Cook JL, et al. Recommendations for the use of mechanical circulatory support: ambulatory and community patient care: a scientific statement from the American Heart Association. *Circulation* 2017;135(25):e1145-e1158. DOI: 10.1161/CIR.0000000000000507. (Reaffirmed 2025 Jun) [Context Link 1, 2, 3] View abstract...
35. Kumar RG, Zhang W, Evans E, Dams-O'Connor K, Thomas KS. Research letter: characterization of older adults hospitalized with traumatic brain injury admitted to long-term acute care hospitals. *Journal of Head Trauma Rehabilitation* 2022;37(2):89-95. DOI: 10.1097/HTR.0000000000000685. [Context Link 1] View abstract...
36. Centers for Medicare and Medicaid Services. "Examples of skilled nursing and rehabilitation services." 42 CFR Pt. 409.33 Washington, DC 2023 Oct [accessed 2025 Jul 22] Accessed at: <https://www.ecfr.gov/>. [Context Link 1, 2, 3]
37. Ebot J. Managing complex wounds in skilled nursing facilities (SNFs). *Cureus* 2023;15(10):Online. DOI: 10.7759/cureus.47581. [Context Link 1] View abstract...
38. Emanuel EJ. Palliative and end-of-life care. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:72-89. [Context Link 1]
39. Hawken SE, et al. Cohorting KPC+ *Klebsiella pneumoniae* (KPC-Kp)-positive patients: A genomic expose of cross-colonization hazards in a long-term acute-care hospital (LTACH). *Infection Control and Hospital Epidemiology* 2020;41(10):1162-1168. DOI: 10.1017/ice.2020.261. [Context Link 1, 2] View abstract...
40. Weiner-Lastinger LM, et al. Antimicrobial-resistant pathogens associated with adult healthcare-associated infections: Summary of data reported to the National Healthcare Safety Network, 2015-2017. *Infection Control and Hospital Epidemiology* 2020;41(1):1-18. DOI: 10.1017/ice.2019.296. [Context Link 1, 2, 3] View abstract...
41. Lapp Z, et al. Regional spread of blaNDM-1-containing *klebsiella pneumoniae* ST147 in post-acute care facilities. *Clinical Infectious Diseases* 2021;73(8):1431-1439. DOI: 10.1093/cid/ciab457. [Context Link 1, 2] View abstract...
42. Arnold M, Yanez C, Yanez B. Wound healing in the long-term acute care setting using an air fluidized therapy/continuous low-pressure therapeutic bed: a multiple case series. *Journal of Wound, Ostomy, and Continence Nursing* 2020;47(3):284-290. DOI: 10.1097/WON.0000000000000646. [Context Link 1, 2] View abstract...
43. Massaro AF. Approach to the patient with shock. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2235-2241. [Context Link 1]
44. Patterson JT. Neurosurgery. In: Townsend CM, Beauchamp RD, Evers BM, Mattox KL, editors. *Sabiston Textbook of Surgery*. 21st ed. Elsevier; 2022:1883-1915. [Context Link 1, 2, 3]
45. Ingbar DH, Thiele H. Cardiogenic shock and pulmonary edema. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2250-2257. [Context Link 1]
46. Brant EB, Seymour CW, Angus DC. Sepsis and septic shock. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2241-2249. [Context Link 1]

47. Griffey RT, Schneider RM, Adler L, Todorov A. Post-acute and long-term care patients account for a disproportionately high number of adverse events in the emergency department. *Journal of the American Medical Directors Association* 2020;S1525-8610(20):30565-X. DOI: 10.1016/j.jamda.2020.06.043. [Context Link 1] View abstract...
48. Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease. 2025 report [Internet] Global Initiative for Chronic Obstructive Lung Disease (GOLD). 2025 Accessed at: <https://www.goldcopd.org>. [accessed 2025 Sep 11] [Context Link 1, 2, 3]
49. Macrea M, et al. Long-term noninvasive ventilation in chronic stable hypercapnic chronic obstructive pulmonary disease. An official American Thoracic Society clinical practice guideline. *American Journal of Respiratory and Critical Care Medicine* 2020;202(4):e74-e87. DOI: 10.1164/rccm.202006-2382ST. (Reaffirmed 2025 Mar) [Context Link 1] View abstract...
50. Rosenthal MD, Bala T, Wang Z, Loftus T, Moore F. Chronic critical illness patients fail to respond to current evidence-based intensive care nutrition secondarily to Persistent Inflammation, Immunosuppression, and Catabolic Syndrome. *Journal of Parenteral and Enteral Nutrition* 2020;44(7):1237-1249. DOI: 10.1002/jpen.1794. [Context Link 1] View abstract...
51. Rajski B, Furey V, Nguyen A, Duffner LA, Young B, Husain IA. Dysphagia outcomes in COVID-19 patients: experiences in long-term acute care hospital (LTACH). *European Archives of Oto-Rhino-Laryngology* 2023;280(9):4255-4260. DOI: 10.1007/s00405-023-08032-7. [Context Link 1] View abstract...
52. Sumarsono N, Sudore RL, Smith AK, Pantilat SZ, Anderson WG, Makam AN. Availability of palliative care in long-term acute care hospitals. *Journal of the American Medical Directors Association* 2021;22(10):2207-2211. DOI: 10.1016/j.jamda.2021.04.007. [Context Link 1] View abstract...
53. Levoy K, Ashare RL, Ganta N, O'Connor N, Meghani SH. Caregiver engagement in serious illness communication in a long-term acute care hospital setting. *American Journal of Hospice & Palliative Care* 2024;41(10):1109-1119. DOI: 10.1177/10499091231219799. [Context Link 1] View abstract...
54. Keilty M, et al. Inpatient virtual vision clinic improves access to vision rehabilitation before and during the COVID-19 pandemic. *Archives of Rehabilitation Research and Clinical Translation* 2021;3(1):100100. DOI: 10.1016/j.arrct.2020.100100. [Context Link 1] View abstract...
55. Le Danseur M. Stroke rehabilitation. *Critical Care Nursing Clinics of North America* 2020;32(1):97-108. [Context Link 1] View abstract...
56. McIlwaine M, Button B, Nevitt SJ. Positive expiratory pressure physiotherapy for airway clearance in people with cystic fibrosis. *Cochrane Database of Systematic Reviews* 2019, Issue 11. Art. No.: CD003147. DOI: 10.1002/14651858.CD003147.pub5. [Context Link 1] View abstract...
57. Surani S, et al. Weaning from mechanical ventilator in a long-term acute care hospital: a retrospective analysis. *Open Respiratory Medicine Journal* 2020;14:62-66. DOI: 10.2174/1874306402014010062. [Context Link 1] View abstract...
58. Schriger DL. Approach to the patient with abnormal vital signs. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:32-35. [Context Link 1]
59. Ramgopal S, Sepanski RJ, Martin-Gill C. Empirically derived age-based vital signs for children in the out-of-hospital setting. *Annals of Emergency Medicine* 2023;81(4):402-412. DOI: 10.1016/j.annemergmed.2022.09.019. [Context Link 1] View abstract...
60. Yealy DM, Kosowsky JM. Dysrhythmias. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:890-920.e2. [Context Link 1, 2]
61. Joglar JA, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the diagnosis and management of atrial fibrillation: a report of the American College of Cardiology/American Heart Association joint committee on clinical practice guidelines. *Journal of the American College of Cardiology* 2024;149(1):Online. DOI: 10.1016/j.jacc.2023.08.017. (Reaffirmed 2025 Mar) [Context Link 1] View abstract...
62. Rao SV, et al. 2025 ACC/AHA/ACEP/NAEMSP/SCAI Guideline for the Management of Patients With Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation* 2025;DOI: 10.1161/CIR.0000000000001309. (Reaffirmed 2025 Mar 04) [Context Link 1] View abstract...
63. Aufderheide TP. Peripheral arteriovascular disease. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:1008-1021.e3. [Context Link 1]
64. Heidenreich PA, et al. 2022 AHA/ACC/HFSA guideline for the management of heart failure: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation* 2022;145(18):e895-e1032. DOI: 10.1161/CIR.0000000000001063. (Reaffirmed 2025 Jan) [Context Link 1] View abstract...
65. Braithwaite SA, Wessel AL. Dyspnea. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:194-201.e2. [Context Link 1]
66. Naureckas ET, Solway J. Disturbances of respiratory function. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2133-2139. [Context Link 1]
67. Matthay MA, Ware LB. Acute respiratory failure. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:642-652. [Context Link 1]
68. Rakoczy K. Acute respiratory failure. In: Gershel JC, Rauch DA, editors. *Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics*. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2023:749-754. [Context Link 1]
69. Wald O, Izhar U, Sugarbaker DJ. Lung, chest wall, pleura and mediastinum. In: Townsend CM, Beauchamp RD, Evers BM, Mattox KL, editors. *Sabiston Textbook of Surgery*. 21st ed. Elsevier; 2022:1584-1640.e1. [Context Link 1]
70. Broaddus VC, Light RW. Pleural effusion. In: Broaddus VC, et al., editors. *Murray & Nadel's Textbook of Respiratory Medicine*. 7th ed. Elsevier Saunders; 2022:1498-1523.e13. [Context Link 1]
71. Haider SK, Vemana AP. Pneumothorax. In: Kliegman RM, et al., editors. *Nelson Textbook of Pediatrics*. 22nd ed. Elsevier; 2025:2703-2707. [Context Link 1]
72. Hallifax R, Rahman NM. Pneumothorax. In: Broaddus VC, et al., editors. *Murray & Nadel's Textbook of Respiratory Medicine*. 7th ed. Elsevier Saunders; 2022:1539-1550.e4. [Context Link 1]

73. Brown CA, Walls RM. Airway. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:2-23.e2. [Context Link 1]
74. Fisher B, Fisher E. Airway management and respiratory support. In: Gershel JC, Rauch DA, editors. *Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics*. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2023:755-760. [Context Link 1]
75. Apfelbaum JL, et al. 2022 American Society of Anesthesiologists practice guidelines for management of the difficult airway. *Anesthesiology* 2022;136(1):31-81. DOI: 10.1097/ALN.0000000000004002. [Context Link 1] View abstract...
76. Ouellette DR, et al. Liberation from mechanical ventilation in critically ill adults: an official American College of Chest Physicians/American Thoracic Society clinical practice guideline: inspiratory pressure augmentation during spontaneous breathing trials, protocols minimizing sedation, and noninvasive ventilation immediately after extubation. *Chest* 2017;151(1):166-80. DOI: 10.1016/j.chest.2016.10.036. [Context Link 1] View abstract...
77. Davidson KR, Shojaee S. Chest tubes and indwelling pleural catheters. In: Wahidi MM, Ost DE, editors. *Practical Guide to Interventional Pulmonology*. Elsevier; 2023:165-177. [Context Link 1]
78. Toth JW, Reed MF, Ventola LK. Chest tube drainage devices. *Seminars in Respiratory and Critical Care Medicine* 2019;40(3):386-393. DOI: 10.1055/s-0039-1694769. [Context Link 1] View abstract...
79. Lobdell KW, Engelman DT. Chest tube management: past, present, and future directions for developing evidence-based best practices. *Innovations (Phila)* 2023;18(1):41-48. DOI: 10.1177/15569845231153623. [Context Link 1] View abstract...
80. Roebker JA, Kord A, Chan K, Rao R, Ray CE, Ristagno R. Chest tube placement and management: a practical review. *Seminars in Interventional Radiology* 2023;40(2):231-239. DOI: 10.1055/s-0043-1768680. [Context Link 1] View abstract...
81. Nield LS, Kamat D. Fever. In: Kliegman RM, et al., editors. *Nelson Textbook of Pediatrics*. 22nd ed. Elsevier; 2025:1640-1642. [Context Link 1]
82. Melia MT. Approach to fever or suspected infection in the normal host. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:1845-1851. [Context Link 1, 2]
83. Sifri CD. Approach to fever and suspected infection in the immunocompromised host. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:1851-1862. [Context Link 1, 2]
84. Hooper DC, Shenoy ES, Elshaboury RH. Treatment and prophylaxis of bacterial infections. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:1148-1163. [Context Link 1]
85. Blum FC, Biros MH. Fever in the adult patient. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:90-95.e1. [Context Link 1]
86. Mick NW. Pediatric fever. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:2067-2077.e2. [Context Link 1]
87. Singh M, Fernandez-Frackelton M. Bacteria. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:1586-1609.e3. [Context Link 1]
88. Kliegman RM, et al. Renal failure. In: Kliegman RM, et al., editors. *Nelson Textbook of Pediatrics*. 22nd ed. Elsevier; 2025:3242-3253. [Context Link 1]
89. Agarwal A, Barasch J. Acute kidney injury. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:770-775.e1. [Context Link 1]
90. Cohen D, Valeri AM. Treatment of irreversible renal failure. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:840-848. [Context Link 1]
91. Swarm RA, et al. Adult Cancer Pain. *NCCN Clinical Practice Guidelines in Oncology [Internet] National Comprehensive Cancer Network (NCCN)*. v. 2.2025; 2025 May 21 Accessed at: <https://www.nccn.org/>. [accessed 2025 Jun 04] [Context Link 1]
92. Cohen SP. Pain. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:133-141.e1. [Context Link 1]
93. Peterson SJB, Weisman SJ. Pediatric pain management. In: Kliegman RM, et al., editors. *Nelson Textbook of Pediatrics*. 22nd ed. Elsevier; 2025:677-700. [Context Link 1]
94. Berger MJ, et al. Antiemesis. *NCCN Clinical Practice Guidelines in Oncology [Internet] National Comprehensive Cancer Network (NCCN)*. v. 2.2025; 2025 May 12 Accessed at: <https://www.nccn.org/>. [accessed 2025 May 19] [Context Link 1]
95. Fourth consensus guidelines for the management of postoperative nausea and vomiting: erratum. *Anesthesia and Analgesia* 2020;131(5):e241. DOI: 10.1213/ANE.0000000000005245. [Context Link 1] View abstract...
96. Creager MA, Loscalzo J. Arterial diseases of the extremities. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2107-2115. [Context Link 1]
97. Raja AS. Peripheral vascular trauma. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:429-437.e2. [Context Link 1]
98. Simon BC, Hern HG. Wound management principles. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:651-665.e2. [Context Link 1]
99. Osborn PM, Schmidt AH. Diagnosis and management of acute compartment syndrome. *Journal of the American Academy of Orthopedic Surgeons* 2021;29(5):183-188. DOI: 10.5435/JAAOS-D-19-00858. [Context Link 1] View abstract...
100. Ghany MG, Hoofnagle JH. Approach to the patient with liver disease. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2546-2553. [Context Link 1]
101. Befeler AS, Bacon BR. Cirrhosis and its complications. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2624-2633. [Context Link 1]

102. Greenberger NJ, Paumgartner G, Pratt DS. Diseases of the gallbladder and bile ducts. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2641-2652. [Context Link 1]
103. Lowenstein DH, Josephson SA, Hauser SL. Approach to the patient with neurologic disease. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:3277-3282. [Context Link 1]
104. Kochanek PM, Bell MJ. Neurologic emergencies and stabilization. In: Kliegman RM, et al., editors. *Nelson Textbook of Pediatrics*. 22nd ed. Elsevier; 2025:581-588. [Context Link 1]
105. Martinez JP. Abdominal pain. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:211-220.e1. [Context Link 1]
106. Seifter JL. Urinary tract obstruction. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2373-2376. [Context Link 1]
107. Nakada SY, Knoedler MA, Best SL. Management of upper urinary tract obstruction. In: Dmochowski RR, et al., editors. *Campbell Walsh Wein Urology*. 13th ed. Elsevier; 2026:1903-1941.e8. [Context Link 1]
108. Kliegman RM, et al. Electrolyte and acid-base disorders. In: Kliegman RM, et al., editors. *Nelson Textbook of Pediatrics*. 22nd ed. Elsevier; 2025:485-525. [Context Link 1]
109. Seifter JL. Acid-base disorders. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:752-765.e1. [Context Link 1]
110. Dhataria KK, Umpierrez GE, Crandall JP. Diabetes mellitus. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:1534-1551. [Context Link 1]
111. Davis SN, Cryer PE. Hypoglycemia. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:3129-3135. [Context Link 1]
112. American Diabetes Association. Standards of care in diabetes - 2025. *Diabetes Care* 2025;48(S1):S1-S352. (Reaffirmed 2025 Mar) [Context Link 1]
113. Hussain K. Hypoglycemia. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:1551-1558. [Context Link 1]
114. Berend K, de Vries AP, Gans RO. Physiological approach to assessment of acid-base disturbances. *New England Journal of Medicine* 2014;371(15):1434-45. DOI: 10.1056/NEJMr1003327. [Context Link 1] View abstract...
115. Kraut JA, Madias NE. Lactic acidosis. *New England Journal of Medicine* 2014;371(24):2309-2319. DOI: 10.1056/NEJMr1309483. [Context Link 1] View abstract...
116. Al-Awqati Q, Radhakrishnan J. Disorders of sodium and water. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:733-744.e1. [Context Link 1, 2]
117. Pfennig CL, Slovis CM. Electrolyte disorders. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:1525-1542.e2. [Context Link 1, 2]
118. Seifter JL. Potassium Disorders. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:745-752. [Context Link 1]
119. Adrogue HJ, Madias NE. The syndrome of inappropriate antidiuresis. *New England Journal of Medicine* 2023;389(16):1499-1509. DOI: 10.1056/NEJMc2210411. [Context Link 1] View abstract...
120. Bishop KD, Rizack T. Oncologic emergencies. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. *Principles and Practice of Hospital Medicine*. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1436-1442. [Context Link 1]
121. Chonchol M, Smogorzewski MJ, Stubbs JR, Yu AS. Disorders of calcium, magnesium, and phosphate balance. In: Yu AS, Chertow GM, Luyckx VA, Marsden PA, Skorecki K, Taal MW, editors. *Brenner and Rector's The Kidney*. 11th ed. Philadelphia, PA: Elsevier; 2020:580-613 e10. [Context Link 1]
122. Yu ASL. Disorders of magnesium and phosphorus. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:766-769.e1. [Context Link 1, 2]
123. Gaddy JD, Dupre AA. Disorders of hemostasis. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:1486-1499.e2. [Context Link 1]
124. Dyke C, et al. Universal definition of perioperative bleeding in adult cardiac surgery. *Journal of Thoracic and Cardiovascular Surgery* 2014;147(5):1458-1463.e1. DOI: 10.1016/j.jtcvs.2013.10.070. [Context Link 1] View abstract...
125. Bartoszko J, et al. Comparison of two major perioperative bleeding scores for cardiac surgery trials: universal definition of perioperative bleeding in cardiac surgery and European coronary artery bypass grafting bleeding severity grade. *Anesthesiology* 2018;129(6):1092-1100. DOI: 10.1097/ALN.0000000000002179. [Context Link 1] View abstract...
126. Levy JH, et al. Consensus statement: hemostasis trial outcomes in cardiac surgery and mechanical support. *Annals of Thoracic Surgery* 2022;113(3):1026-1035. DOI: 10.1016/j.athoracsur.2021.09.080. [Context Link 1] View abstract...
127. Sujata M, Gebara MA, Fabian T, Solai L. Delirium. In: Boland R, Verduin ML, editors. *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*. 11th ed. Wolters Kluwer; 2025:1229-1237. [Context Link 1]
128. Taylor E. The role of the hospital in the care of persons with mental illness. In: Boland R, Verduin ML, editors. *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*. 11th ed. Wolters Kluwer; 2025:4477-4585. [Context Link 1]
129. Wilson C, Martin A. Inpatient psychiatric, partial hospitalization, and residential treatment for children and adolescents. In: Boland R, Verduin ML, editors. *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*. 11th ed. Wolters Kluwer; 2025:3935-3939. [Context Link 1]
130. Pumariega AJ. Community-based treatment. In: Boland R, Verduin ML, editors. *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*. 11th ed. Wolters Kluwer; 2025:3940-3947. [Context Link 1]

131. Vaughan EP, Kimonis ER, Frick PJ. Disruptive behavior disorders in children and adolescents. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:3747-3760. [Context Link 1]
132. Wagner KD, Benton T, Turner CA II. Depressive disorders and suicide. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:3815-3827. [Context Link 1]
133. Rudd MD, Roberts LW. Assessment of suicide risk. In: Roberts LW, editor. The American Psychiatric Publishing Textbook of Psychiatry. 7th ed. Washington DC: American Psychiatric Association Publishing; 2019:91-110. [Context Link 1]
134. Assessment and Management of Patients at Risk for Suicide Work Group. VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide. VA/DoD Evidence Based Practice [Internet] U.S. Department of Veteran Affairs and the Department of Defense. Version 3.0; 2024 Accessed at: <https://www.healthquality.va.gov/guidelines/>. [accessed 2025 Sep 17] [Context Link 1]
135. Luo SX, Bisaga A. Opioid use and related disorders: from neuroscience to treatment. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:1293-1446. [Context Link 1]
136. Mariani JJ. Sedative-, hypnotic-, or anxiolytic-related disorders. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:1419-1431. [Context Link 1]
137. Schuckit MA. Alcohol-related disorders. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:1295-1310. [Context Link 1]
138. Hoffer LJ, Bistrian BR, Driscoll DF. Enteral and parenteral nutrition. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. Harrison's Principles of Internal Medicine. 21st ed. McGraw Hill Education; 2022:2539-2546. [Context Link 1]
139. Transitional planning: understanding levels and transitions of care. In: Powell SK, Tahan H, editors. Case Management: A Practical Guide for Education and Practice. 4th ed. Philadelphia, PA: Wolters Kluwer, Lippincott, Williams & Wilkins; 2019:156-211. [Context Link 1]
140. Mizuma K, et al. Clarifying differences in viewpoints between multiple healthcare professionals during discharge planning assessments when discharging patients from a long-term care hospital to home. Evaluation and Program Planning 2020;82:101848. DOI: 10.1016/j.evalprogplan.2020.101848. [Context Link 1] View abstract...
141. Herridge MS, Azoulay E. Outcomes after critical illness. New England Journal of Medicine 2023;388(10):913-924. DOI: 10.1056/NEJMra2104669. [Context Link 1] View abstract...
142. Thrush A, Rozek M, Dekerlegand JL. The clinical utility of the functional status score for the intensive care unit (FSS-ICU) at a long-term acute care hospital: a prospective cohort study. Physical Therapy 2012;92(12):1536-1545. DOI: 10.2522/ptj.20110412. [Context Link 1] View abstract...
143. Sterni LM, et al. An official American Thoracic Society clinical practice guideline: pediatric chronic home invasive ventilation. American Journal of Respiratory and Critical Care Medicine 2016;193(8):e16-e35. DOI: 10.1164/rccm.201602-0276ST. (Reaffirmed 2025 Jun) [Context Link 1] View abstract...
144. Centers for Medicare and Medicaid Services. "Admissions." 42 CFR 412.3 Washington, DC 2025 Jul [accessed 2025 Jul 22] Accessed at: <https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-B/part-412>. [Context Link 1]
145. Centers for Medicare and Medicaid Services. "Hospital services excluded from payment under the hospital outpatient prospective payment system." 42 CFR 419.22 Washington, DC 2023 Jul [accessed 2025 Jul 22] Accessed at: <https://www.ecfr.gov/>. [Context Link 1]
146. Centers for Medicare and Medicaid Services. "Requirements relating to basic benefits." 42 CFR 422.101 Washington, DC 2025 Jun 03 [accessed 2025 Jul 23] Accessed at: <https://www.ecfr.gov/>. [Context Link 1]
147. Centers for Medicare and Medicaid Services. Medicare Benefit Policy Manual. Chapter 1 - Inpatient Hospital Services Covered Under Part A Rev. 10892 [Internet] Centers for Medicare and Medicaid Services. 2021 Aug Accessed at: <https://www.cms.gov/manuals/>. [accessed 2025 Sep 09] [Context Link 1]
148. Centers for Medicare and Medicaid Services. Medicare Benefit Policy Manual. Chapter 6 - Hospital Services Covered Under Part B Rev. 12425 [Internet] Centers for Medicare and Medicaid Services. 2023 Dec Accessed at: <http://www.cms.gov/manuals/>. [accessed 2025 Sep 09] [Context Link 1]
149. Centers for Medicare and Medicaid Services. Medicare Benefit Policy Manual. Chapter 15 - Covered Medical and Other Health Services Rev. 13108 [Internet] Centers for Medicare and Medicaid Services. 2025 Apr 11 Accessed at: <https://www.cms.gov/manuals/>. [accessed 2025 Sep 09] [Context Link 1]
150. Centers for Medicare and Medicaid Services. Medicare Program Integrity Manual. Chapter 6, Section 6.5 - Medical Review of Inpatient Hospital Claims for Part A Payment Rev. 10365 [Internet] Centers for Medicare and Medicaid Services. 2020 Oct 02 Accessed at: <https://www.cms.gov/medicare/regulations-guidance/manuals/internet-only-manuals-ioms>. [accessed 2025 Sep 09] [Context Link 1]
151. Medicare Coverage Database. [Internet] Centers for Medicare and Medicaid Services. Accessed at: <https://www.cms.gov/medicare-coverage-database/search.aspx>? Updated 2025 [accessed 2025 Oct 23] [Context Link 1]

Footnotes

[A] Mild or low-grade hepatic encephalopathy (also known as minimal or covert hepatic encephalopathy) presents as unawareness (mild), euphoria or anxiety, shortened attention span, impairment of calculation ability, or lethargy. Moderate to severe or high-grade hepatic encephalopathy (also known as overt encephalopathy) includes disorientation (eg, to time, place, or person), inappropriate behavior, impaired responsiveness to stimuli, confusion, stupor, or coma.(14)(15)(16) [A in Context Link 1]

[B] In a study of a national cohort including 396 patients cared for in an LTACH, 63% of patients died within 2.5 years of LTACH hospitalization.(18) The median time to death was 94 days (interquartile range (IQR) 29 to 306 days) after LTACH admission.(18) Looked at from another angle, 25% died while hospitalized in the LTACH and another 23% died within 90 days of LTACH discharge.(18) The pre-LTACH characteristics of this cohort included median age 75 years (IQR 69 to 82 years of age), 51% female, 74% non-

Hispanic White, 40% with diabetes, 49% with heart failure, 56% with no cognitive or functional impairment (28% with severe cognitive or functional impairment), 11-day (IQR 7 to 20 days) median length of stay in acute care hospital prior to LTACH admission, and 54% with ICU stay of 3 days or more in an acute care hospital prior to LTACH admission.(18) Characteristics of the LTACH hospitalization included 23-day median length of stay (IQR 16 to 32 days), 38% with a respiratory diagnosis, and 41% with mechanical ventilation during acute care or LTACH hospitalization.(18) [B in Context Link 1]

[C] Some payers (eg, CMS) have instituted criteria (eg, 3-day minimum ICU or critical care unit stay at transferring acute care hospital or at least 96 hours of mechanical ventilation during stay in LTACH) that a patient must meet if the receiving LTACH facility is to be reimbursed at the usual LTACH rate. Under this paradigm, LTACH facility care for a patient not meeting these criteria would be reimbursed at a lower site-neutral rate. These promulgated minimum criteria should not be interpreted as criteria to identify patients appropriate for an LTACH. For example, very few patients with a 3-day stay in an ICU require LTACH care. Likewise, the vast majority of patients on a mechanical ventilator for 96 hours or more will not require a very long, slow weaning process appropriate for an LTACH. (1)(2)(6) [C in Context Link 1]

[D] In addition to condition-specific care, particular attention may be warranted to prevent complications and acquired infections (eg, pressure injuries, ventilator-associated pneumonia, catheter-associated infection).(39)(40)(41)(42) [D in Context Link 1]

[E] Patients with chronic disease (eg, renal failure with potassium greater than 5 mEq/L (mmol/L) or liver disease with sodium less than 135 mEq/L (mmol/L)) with chronically abnormal electrolytes are often manageable on an outpatient basis.(117) [E in Context Link 1]

[F] The calcium level should be corrected for hypoalbuminemia. An ionized calcium level may be more accurate than a total serum calcium level, especially in the setting of acidosis, renal failure, massive transfusions, or the presence of a paraprotein.(120)(121) [F in Context Link 1]

[G] Possible sites include subacute care, acute rehabilitation, skilled nursing facility, home, and home with home healthcare support. The patient may transition among the sites according to their changing medical condition. [G in Context Link 1]

Definitions

Abdominal status acceptable

- Abdominal status acceptable, as indicated by **ALL** of the following(1):
 - Bowel sounds present
 - No ileus, signs of obstruction, or peritonitis
 - Abdominal distention absent or manageable at next level of care

References

1. Martinez JP. Abdominal pain. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:211-220.e1.

Activity level acceptable

- Activity level acceptable, as indicated by **1 or more** of the following:
 - Patient ambulatory and can perform ADL as appropriate for age and development
 - Activity at baseline
 - Activity level acceptable for next level of care

Airway status acceptable

- Airway status acceptable, as indicated by **1 or more** of the following(1)(2)(3)(4):
 - Patient extubated, breathing adequately, and able to protect airway (eg, able to handle secretions)
 - Stable tracheostomy (eg, more than 48 hours old) in place

References

1. Brown CA, Walls RM. Airway. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:2-23.e2.
2. Fisher B, Fisher E. Airway management and respiratory support. In: Gershel JC, Rauch DA, editors. Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2023:755-760.
3. Apfelbaum JL, et al. 2022 American Society of Anesthesiologists practice guidelines for management of the difficult airway. Anesthesiology 2022;136(1):31-81. DOI: 10.1097/ALN.0000000000004002.
4. Ouellette DR, et al. Liberation from mechanical ventilation in critically ill adults: an official American College of Chest Physicians/American Thoracic Society clinical practice guideline: inspiratory pressure augmentation during spontaneous breathing trials, protocols minimizing sedation, and noninvasive ventilation immediately after extubation. Chest 2017;151(1):166-80. DOI: 10.1016/j.chest.2016.10.036.

Bacteremia

- Bacteremia refers to blood culture isolation of a bacterial species that is likely to be pathologic and not a contaminant.(1)(2)

References

1. Lowy FD. Staphylococcal infections. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. Harrison's Principles of Internal Medicine. 21st ed. McGraw Hill Education; 2022:1178-1188.
2. Rice LB. Principles of anti-infective therapy. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:1840-1845.

Behavioral health status acceptable

- Behavioral health status acceptable, as indicated by **1 or more** of the following:
 - No behavioral health issues
 - Behavioral health issues manageable at next level of care, as indicated by **ALL** of the following(1)(2)(3)(4):
 - Current functional status manageable at next level of care
 - Current behaviors manageable at next level of care(5)
 - Risk of danger to self or others absent or manageable at next level of care(6)(7)(8)
 - Substance misuse, withdrawal problems, or withdrawal management program needs absent or manageable at next level of care(9)(10)(11)

References

1. Sujata M, Gebara MA, Fabian T, Solai L. Delirium. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:1229-1237.
2. Taylor E. The role of the hospital in the care of persons with mental illness. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:4477-4585.
3. Wilson C, Martin A. Inpatient psychiatric, partial hospitalization, and residential treatment for children and adolescents. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:3935-3939.
4. Pumariega AJ. Community-based treatment. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:3940-3947.
5. Vaughan EP, Kimonis ER, Frick PJ. Disruptive behavior disorders in children and adolescents. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:3747-3760.
6. Wagner KD, Benton T, Turner CA II. Depressive disorders and suicide. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:3815-3827.
7. Rudd MD, Roberts LW. Assessment of suicide risk. In: Roberts LW, editor. The American Psychiatric Publishing Textbook of Psychiatry. 7th ed. Washington DC: American Psychiatric Association Publishing; 2019:91-110.
8. Assessment and Management of Patients at Risk for Suicide Work Group. VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide. VA/DoD Evidence Based Practice [Internet] U.S. Department of Veteran Affairs and the Department of Defense. Version 3.0; 2024 Accessed at: <https://www.healthquality.va.gov/guidelines/>. [accessed 2025 Sep 17]
9. Luo SX, Bisaga A. Opioid use and related disorders: from neuroscience to treatment. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:1293-1446.
10. Mariani JJ. Sedative-, hypnotic-, or anxiolytic-related disorders. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:1419-1431.
11. Schuckit MA. Alcohol-related disorders. In: Boland R, Verduin ML, editors. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 11th ed. Wolters Kluwer; 2025:1295-1310.

Cardiovascular status acceptable

- Cardiovascular status acceptable, as indicated by **ALL** of the following:
 - Cardiac rhythm acceptable, as indicated by **1 or more** of the following(1):
 - Normal sinus or paced rhythm
 - Sinus arrhythmia or supraventricular arrhythmia (eg, atrial fibrillation) with ventricular rate controlled, and no need for cardioversion(2)
 - No severe cardiac arrhythmias noted (eg, sustained ventricular tachycardia, ventricular fibrillation)(1)
 - No severe cardiac or peripheral ischemia(3)(4)
 - Heart failure or other cardiovascular disease is **1 or more** of the following(5):
 - Not present
 - At baseline
 - Manageable at next level of care

References

1. Yealy DM, Kosowsky JM. Dysrhythmias. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:890-920.e2.
2. Joglar JA, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the diagnosis and management of atrial fibrillation: a report of the American College of Cardiology/American Heart Association joint committee on clinical practice guidelines. Journal of the American College of Cardiology 2024;149(1):Online. DOI: 10.1016/j.jacc.2023.08.017. (Reaffirmed 2025 Mar)
3. Rao SV, et al. 2025 ACC/AHA/ACEP/NAEMSP/SCAI Guideline for the Management of Patients With Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. Circulation 2025;DOI: 10.1161/CIR.0000000000001309. (Reaffirmed 2025 Mar 04)
4. Aufderheide TP. Peripheral arteriovascular disease. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:1008-1021.e3.
5. Heidenreich PA, et al. 2022 AHA/ACC/HFSA guideline for the management of heart failure: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. Circulation 2022;145(18):e895-e1032. DOI: 10.1161/CIR.0000000000001063. (Reaffirmed 2025 Jan)

Electrolyte status acceptable

- Electrolyte status acceptable, as indicated by **1 or more** of the following(1):
 - Electrolyte abnormality manageable at next level of care[A]
 - No electrolyte abnormality, as indicated by **ALL** of the following:
 - Potassium greater than 3.5 mEq/L (mmol/L) and less than 5.0 mEq/L (mmol/L)(2)
 - Sodium greater than 135 mEq/L (mmol/L) and less than 145 mEq/L (mmol/L)(3)(4)
 - Calcium[B] greater than 8.5 mg/dL (2.13 mmol/L) and less than 10.5 mg/dL (2.63 mmol/L)
 - Phosphorus greater than 2.5 mg/dL (0.81 mmol/L) and less than 5.0 mg/dL (1.62 mmol/L)(7)
 - Magnesium greater than 1.5 mEq/L (0.75 mmol/L) and less than 3.0 mEq/L (1.5 mmol/L)(7)

References

1. Pfennig CL, Slovis CM. Electrolyte disorders. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:1525-1542.e2.
2. Seifter JL. Potassium Disorders. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:745-752.
3. Adrogué HJ, Madias NE. The syndrome of inappropriate antidiuresis. New England Journal of Medicine 2023;389(16):1499-1509. DOI: 10.1056/NEJMcp2210411.
4. Al-Awqati Q, Radhakrishnan J. Disorders of sodium and water. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:733-744.e1.
5. Bishop KD, Rizack T. Oncologic emergencies. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1436-1442.
6. Chonchol M, Smogorzewski MJ, Stubbs JR, Yu AS. Disorders of calcium, magnesium, and phosphate balance. In: Yu AS, Chertow GM, Luyckx VA, Marsden PA, Skorecki K, Taal MW, editors. Brenner and Rector's The Kidney. 11th ed. Philadelphia, PA: Elsevier; 2020:580-613.e10.
7. Yu ASL. Disorders of magnesium and phosphorus. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:766-769.e1.

Footnotes

- A. Patients with chronic disease (eg, renal failure with potassium greater than 5 mEq/L (mmol/L) or liver disease with sodium less than 135 mEq/L (mmol/L)) with chronically abnormal electrolytes are often manageable on an outpatient basis.(1)
- B. The calcium level should be corrected for hypoalbuminemia. An ionized calcium level may be more accurate than a total serum calcium level, especially in the setting of acidosis, renal failure, massive transfusions, or the presence of a paraprotein.(5)(6)

Hemodynamic stability

- Hemodynamic stability, as indicated by **1 or more** of the following:
 - Hemodynamic abnormalities at baseline or acceptable for next level of care
 - Patient hemodynamically stable, as indicated by **ALL** of the following(1)(2):
 - Tachycardia absent
 - Hypotension absent
 - No evidence of inadequate perfusion (eg, no myocardial ischemia)
 - No other hemodynamic abnormalities (eg, no Orthostatic hypotension)

References

1. Schriger DL. Approach to the patient with abnormal vital signs. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:32-35.

2. Ramgopal S, Sepanski RJ, Martin-Gill C. Empirically derived age-based vital signs for children in the out-of-hospital setting. *Annals of Emergency Medicine* 2023;81(4):402-412. DOI: 10.1016/j.annemergmed.2022.09.019.

Hepatic and biliary abnormalities absent or acceptable

- Hepatic and biliary abnormalities absent or acceptable, as indicated by **1 or more** of the following(1)(2)(3):
 - No abnormalities present
 - Hepatic and biliary status acceptable for next level of care, as indicated by **ALL** of the following:
 - Liver function tests normal, stable, or improving
 - Ascites absent, diminishing, or stable, with adequate respiratory function for next level of care
 - Renal function acceptable
 - Bilirubin stable or diminishing
 - Encephalopathy absent or controlled adequately for next level of care
 - No biliary obstruction, or current drainage and treatment plan appropriate for next level of care

References

1. Ghany MG, Hoofnagle JH. Approach to the patient with liver disease. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2546-2553.
2. Befeler AS, Bacon BR. Cirrhosis and its complications. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2624-2633.
3. Greenberger NJ, Paumgartner G, Pratt DS. Diseases of the gallbladder and bile ducts. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:2641-2652.

Hypotension absent

- Hypotension absent,^[A] as indicated by **1 or more** of the following:
 - Hypotension absent in adult patient, as indicated by **1 or more** of the following:
 - Systolic blood pressure greater than or equal to 90 mm Hg^{[A](1)}
 - Mean arterial pressure^[B] greater than or equal to 70 mm Hg  MAP Calculator^{[A](1)(2)}
 - Blood pressure at patient's baseline (eg, healthy adult with low systolic blood pressure), at intentional therapeutic goal (eg, patient with heart failure), or acceptable for next level of care (eg, blood pressure stable and no significant signs or symptoms due to low blood pressure)
 - Hypotension absent in pediatric patient, as indicated by **1 or more** of the following:
 - Systolic blood pressure greater than or equal to 110 mm Hg in child 13 to 17 years of age^{[A](3)}
 - Systolic blood pressure greater than or equal to 100 mm Hg in child 6 to 12 years of age^{[A](3)}
 - Systolic blood pressure greater than or equal to 95 mm Hg in child 3 to 5 years of age^{[A](3)}
 - Systolic blood pressure greater than or equal to 90 mm Hg in child 1 or 2 years of age^{[A](3)}
 - Systolic blood pressure greater than or equal to 80 mm Hg in infant 6 to 11 months of age^{[A](3)}
 - Systolic blood pressure greater than or equal to 70 mm Hg in infant 3 to 5 months of age^{[A](3)}
 - Systolic blood pressure greater than or equal to 65 mm Hg in infant 1 or 2 months of age^{[A](3)}
 - Blood pressure at patient's baseline (eg, healthy child with low systolic blood pressure), at intentional therapeutic goal, or acceptable for next level of care (eg, blood pressure stable and no significant signs or symptoms due to low blood pressure)

References

1. Schrager DL. Approach to the patient with abnormal vital signs. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:32-35.
2. Puskarich MA, Jones AE. Shock. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:34-41.e1.
3. Anderson CC, Kapoor S, Mark TE. Pediatric parameters and equipment. In: Anderson CC, Kapoor S, Mark TE, editors. *The Harriet Lane Handbook: A Manual for Pediatric House Officers*. 23rd ed. Elsevier; 2024:i-iii.

Footnotes

- A. Criteria based upon clinician-acquired numeric values (eg, vital signs, oxygen saturation) should be used if they are accurate reflections of the patient's condition. Transitory findings (eg, abnormal only upon initial emergency department intake or only one time out of multiple readings) that rapidly improve with no or minimal treatment usually do not reflect disease severity or risk for deterioration. This does not imply that an initial or one-time reading cannot ever be applicable. The goal is to separate erroneous or incidental findings from those that truly represent the patient's clinical picture.
- B. The mean arterial pressure (MAP) takes into account both SBP and DBP readings.

Inpatient interventions not needed

- Inpatient interventions not needed; examples include:
 - Stat testing
 - Frequent vital signs, neurologic signs, or vascular checks not performable at next level of care
 - Cardiac monitoring
 - IV vasoactive agent or inotropic agent
 - Frequent respiratory therapy suctioning, pulmonary toilet, or other therapy that is not performable at next level of care
 - Procedure that is not available at next level of care (eg, biopsy, radiology-guided drainage, placement of central port)

Intake acceptable

- Intake acceptable, as indicated by **1 or more** of the following(1):
 - Oral hydration, medications, and diet
 - Enteral hydration, medications, and diet
 - Administration routes performable at next level of care

References

1. Hoffer LJ, Bistran BR, Driscoll DF. Enteral and parenteral nutrition. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. Harrison's Principles of Internal Medicine. 21st ed. McGraw Hill Education; 2022:2539-2546.

Neurologic status acceptable

- Neurologic status acceptable, as indicated by neurologic function and mental status being **1 or more** of the following(1)(2):
 - Normal
 - Baseline
 - Appropriate for next level of care

References

1. Lowenstein DH, Josephson SA, Hauser SL. Approach to the patient with neurologic disease. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. Harrison's Principles of Internal Medicine. 21st ed. McGraw Hill Education; 2022:3277-3282.
2. Kochanek PM, Bell MJ. Neurologic emergencies and stabilization. In: Kliegman RM, et al., editors. Nelson Textbook of Pediatrics. 22nd ed. Elsevier; 2025:581-588.

No blood loss, or problem resolved

- No blood loss, or problem resolved, as indicated by **1 or more** of the following(1)(2)(3)(4):
 - No blood loss problem
 - Repeat evaluation shows blood loss resolved sufficiently (eg, hemoglobin at acceptable level and stable)

References

1. Gaddy JD, Dupre AA. Disorders of hemostasis. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:1486-1499.e2.
2. Dyke C, et al. Universal definition of perioperative bleeding in adult cardiac surgery. Journal of Thoracic and Cardiovascular Surgery 2014;147(5):1458-1463.e1. DOI: 10.1016/j.jtcvs.2013.10.070.
3. Bartoszko J, et al. Comparison of two major perioperative bleeding scores for cardiac surgery trials: universal definition of perioperative bleeding in cardiac surgery and European coronary artery bypass grafting bleeding severity grade. Anesthesiology 2018;129(6):1092-1100. DOI: 10.1097/ALN.0000000000002179.
4. Levy JH, et al. Consensus statement: hemostasis trial outcomes in cardiac surgery and mechanical support. Annals of Thoracic Surgery 2022;113(3):1026-1035. DOI: 10.1016/j.athoracsur.2021.09.080.

No chest tube, or status acceptable

- No chest tube, or status acceptable, as indicated by **1 or more** of the following(1)(2)(3)(4):
 - No chest tube
 - Chest catheter management established for next level of care

References

1. Davidson KR, Shojaaee S. Chest tubes and indwelling pleural catheters. In: Wahidi MM, Ost DE, editors. Practical Guide to Interventional Pulmonology. Elsevier; 2023:165-177.

2. Toth JW, Reed MF, Ventola LK. Chest tube drainage devices. *Seminars in Respiratory and Critical Care Medicine* 2019;40(3):386-393. DOI: 10.1055/s-0039-1694769.
3. Lobdell KW, Engelman DT. Chest tube management: past, present, and future directions for developing evidence-based best practices. *Innovations (Phila)* 2023;18(1):41-48. DOI: 10.1177/15569845231153623.
4. Roebker JA, Kord A, Chan K, Rao R, Ray CE, Ristagno R. Chest tube placement and management: a practical review. *Seminars in Interventional Radiology* 2023;40(2):231-239. DOI: 10.1055/s-0043-1768680.

No infection, or status acceptable

- No infection, or status acceptable, as indicated by **1 or more** of the following(1)(2)(3)(4)(5):
 - No infection present
 - Infection status acceptable for next level of care, as indicated by **ALL** of the following(6):
 - WBC count normal, stable, or declining with treatment
 - Adequate treatment performable at next level of care
 - Organism and sensitivities identified, or adequate clinical response to empiric therapy
 - Repeat cultures negative or not needed

References

1. Hooper DC, Shenoy ES, Elshaboury RH. Treatment and prophylaxis of bacterial infections. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. McGraw Hill Education; 2022:1148-1163.
2. Blum FC, Biros MH. Fever in the adult patient. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:90-95.e1.
3. Mick NW. Pediatric fever. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:2067-2077.e2.
4. Melia MT. Approach to fever or suspected infection in the normal host. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:1845-1851.
5. Sifri CD. Approach to fever and suspected infection in the immunocompromised host. In: Goldman L, Cooney KA, editors. *Goldman-Cecil Medicine*. 27th ed. Elsevier; 2024:1851-1862.
6. Singh M, Fernandez-Frackelton M. Bacteria. In: Walls RM, editor. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 10th ed. Elsevier; 2023:1586-1609.e3.

Orthostatic hypotension

- Orthostatic hypotension,[A][B] as indicated by **1 or more** of the following(1)(2)(3):
 - Fall in SBP of 20 mm Hg or more 1 to 3 minutes after patient sits or stands from recumbent position
 - Fall in DBP of 10 mm Hg or more 1 to 3 minutes after patient sits or stands from recumbent position

References

1. Shibao C, Lipsitz LA, Biaggioni I, American Society of Hypertension Writing Group. Evaluation and treatment of orthostatic hypotension. *Journal of the American Society of Hypertension* 2013 Jul-Aug;7(4):317-324. DOI: 10.1016/j.jash.2013.04.006.
2. Dalal AS, Van Hare GF. Syncope. In: Kliegman RM, et al., editors. *Nelson Textbook of Pediatrics*. 22nd ed. Elsevier; 2025:592-599.
3. Fang JC, O'Gara PT. History and physical examination: an evidence-based approach. In: Libby P, Bonow RO, Mann DL, Tomaselli GF, Bhatt DL, Solomon SD, editors. *Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine*. 12th ed. Elsevier; 2022:123-140.

Footnotes

- A. Concomitant measurements of the heart rate are important to measure to help diagnose subtypes of orthostatic hypotension (eg, the lack of a compensatory increase in heart rate is typical of autonomic failure and an exaggerated tachycardia may be reflective of volume depletion). However, the heart rate is not a component of the definition of orthostatic hypotension, which relies upon blood pressure alone.(1)(2)(3)
- B. Criteria based upon clinician acquired numeric values (eg, vital signs, oxygen saturation) should be used if they are accurate reflections of the patient's condition. Transitory findings (eg, abnormal only upon initial emergency department intake or only one time out of multiple readings) that rapidly improve with no or minimal treatment usually do not reflect disease severity or risk for deterioration. This does not imply that an initial or one-time reading cannot ever be applicable. The goal is to separate erroneous or incidental findings from those that truly represent the patient's clinical picture.

Pain adequately managed

- Pain adequately managed, as indicated by **1 or more** of the following(1)(2)(3):

- Patient tolerating oral, sublingual, or transdermal pain regimen, with adequate breakthrough pain management
- Parenteral pain management regimen appropriate for next level of care

References

1. Swarm RA, et al. Adult Cancer Pain. NCCN Clinical Practice Guidelines in Oncology [Internet] National Comprehensive Cancer Network (NCCN). v. 2.2025; 2025 May 21 Accessed at: <https://www.nccn.org/>. [accessed 2025 Jun 04]
2. Cohen SP. Pain. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:133-141.e1.
3. Peterson SJB, Weisman SJ. Pediatric pain management. In: Kliegman RM, et al., editors. Nelson Textbook of Pediatrics. 22nd ed. Elsevier; 2025:677-700.

Pain and nausea absent or adequately managed

- Pain and nausea absent or adequately managed, as indicated by **1 or more** of the following(1)(2)(3)(4)(5):
 - No pain or nausea
 - Minimal discomfort on oral medications
 - Pain and nausea managed on regimen performable at next level of care

References

1. Swarm RA, et al. Adult Cancer Pain. NCCN Clinical Practice Guidelines in Oncology [Internet] National Comprehensive Cancer Network (NCCN). v. 2.2025; 2025 May 21 Accessed at: <https://www.nccn.org/>. [accessed 2025 Jun 04]
2. Cohen SP. Pain. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:133-141.e1.
3. Peterson SJB, Weisman SJ. Pediatric pain management. In: Kliegman RM, et al., editors. Nelson Textbook of Pediatrics. 22nd ed. Elsevier; 2025:677-700.
4. Berger MJ, et al. Antiemesis. NCCN Clinical Practice Guidelines in Oncology [Internet] National Comprehensive Cancer Network (NCCN). v. 2.2025; 2025 May 12 Accessed at: <https://www.nccn.org/>. [accessed 2025 May 19]
5. Fourth consensus guidelines for the management of postoperative nausea and vomiting: erratum. Anesthesia and Analgesia 2020;131(5):e241. DOI: 10.1213/ANE.0000000000005245.

Physiologic disorders absent, or status acceptable

- Physiologic disorders absent, or status acceptable, as indicated by **1 or more** of the following(1)(2):
 - Physiologic disorders absent
 - Physiologic disorders controlled, as indicated by **ALL** of the following(3):
 - Glucose less than 250 mg/dL (13.88 mmol/L) or near baseline
 - No hypoglycemia(4)(5)(6)
 - pH normal or at stable baseline(7)(8)
 - Dehydration, volume depletion, vomiting, or anasarca absent or adequately controlled for next level of care(9)

References

1. Kliegman RM, et al. Electrolyte and acid-base disorders. In: Kliegman RM, et al., editors. Nelson Textbook of Pediatrics. 22nd ed. Elsevier; 2025:485-525.
2. Seifter JL. Acid-base disorders. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:752-765.e1.
3. Dhatariya KK, Umpierrez GE, Crandall JP. Diabetes mellitus. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:1534-1551.
4. Davis SN, Cryer PE. Hypoglycemia. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. Harrison's Principles of Internal Medicine. 21st ed. McGraw Hill Education; 2022:3129-3135.
5. American Diabetes Association. Standards of care in diabetes - 2025. Diabetes Care 2025;48(S1):S1-S352. (Reaffirmed 2025 Mar)
6. Hussain K. Hypoglycemia. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:1551-1558.
7. Berend K, de Vries AP, Gans RO. Physiological approach to assessment of acid-base disturbances. New England Journal of Medicine 2014;371(15):1434-45. DOI: 10.1056/NEJMra1003327.
8. Kraut JA, Madias NE. Lactic acidosis. New England Journal of Medicine 2014;371(24):2309-2319. DOI: 10.1056/NEJMra1309483.
9. Al-Awqati Q, Radhakrishnan J. Disorders of sodium and water. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:733-744.e1.

Renal function acceptable

- Renal function acceptable, as indicated by **1 or more** of the following(1)(2)(3):
 - Renal function normal (GFR of 90 mL/min/1.73m² (1.50 mL/sec/1.73m²) or more)  eGFR - Adult Calculator
 -  eGFR - Pediatric Calculator
 - Renal function that is **ALL** of the following:

- Impaired (estimated GFR less than 90 mL/min/1.73m² (1.50 mL/sec/1.73m²)) but stable or improving
-  eGFR - Adult Calculator
  eGFR - Pediatric Calculator
- Appropriate for management at next level of care
- Renal function at baseline and appropriate for management at next level of care
- Dialysis needed and performable at next level of care

References

1. Kliegman RM, et al. Renal failure. In: Kliegman RM, et al., editors. Nelson Textbook of Pediatrics. 22nd ed. Elsevier; 2025:3242-3253.
2. Agarwal A, Barasch J. Acute kidney injury. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:770-775.e1.
3. Cohen D, Valeri AM. Treatment of irreversible renal failure. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:840-848.

Respiratory status acceptable

- Respiratory status acceptable, as indicated by **ALL** of the following(1)(2)(3)(4):
 - Patient breathing comfortably (or near baseline) and able to protect airway (eg, able to handle secretions)
 - Tachypnea absent
 - Oxygen saturation greater than 90%, near baseline, or measurement not indicated for condition
 - Supplemental oxygen or respiratory treatments not needed or are performable at next level of care
 - Airflow measurements greater than 60% of predicted, at stable baseline, or measurement not indicated for condition
 - Partial pressure of carbon dioxide and pH normal, at stable baseline, or measurement not indicated for condition

References

1. Braithwaite SA, Wessel AL. Dyspnea. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:194-201.e2.
2. Naureckas ET, Solway J. Disturbances of respiratory function. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. Harrison's Principles of Internal Medicine. 21st ed. McGraw Hill Education; 2022:2133-2139.
3. Matthay MA, Ware LB. Acute respiratory failure. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:642-652.
4. Rakoczy K. Acute respiratory failure. In: Gershel JC, Rauch DA, editors. Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2023:749-754.

Social Determinants of Health Assessment

- Risk of poor health outcomes may be increased by the presence of **1 or more** of the following social determinants of health(1)(2)(3):
 - Housing insecurity, as indicated by **1 or more** of the following:
 - Individual or caregiver's current living situation is **1 or more** of the following(4):
 - Does not have own housing (eg, staying in a hotel, shelter, or with others)
 - Has own housing (eg, house, apartment), but at risk of losing it in the future (ie, behind on rent or mortgage)
 - Has own housing (eg, house, apartment), but has lived in 3 or more places in past year
 - Current housing has **1 or more** of the following:
 - Electrical appliances (eg, stove, refrigerator) not working or unavailable
 - Insufficient heating or cooling
 - Insufficient ventilation
 - Lead paint or pipes
 - Mold
 - Pests (eg, bugs) or rodents
 - Smoke detectors not working or unavailable
 - Food insecurity, as indicated by **1 or more** of the following(5):
 - In the past year, individual or caregiver ran out of food and did not have money to buy more food.
 - In the past year, individual or caregiver worried that they would run out of food before they received money to buy more food.
 - Insufficient transportation, as indicated by **1 or more** of the following(6):
 - In the past year, individual or caregiver missed medical appointments or could not get medications due to lack of transportation.
 - In the past year, individual or caregiver missed nonmedical activities, work, or could not get things needed for daily living due to lack of transportation.
 - Insufficient utilities, as indicated by **1 or more** of the following(7):
 - Utilities (eg, electricity, water, gas, or oil) are currently shut off or unavailable.

- In the past year, electric, water, gas, or oil company threatened to shut off services.
- Personal safety risk, as indicated by **2 or more** of the following(5):
 - Individual is sometimes or frequently physically hurt by another person (including family member).
 - Individual is sometimes or frequently insulted or talked down to by another person (including family member).
 - Individual is sometimes or frequently threatened with physical harm by another person (including family member).
 - Individual is sometimes or frequently screamed or cursed at by another person (including family member).
- Insufficient dependent care, as indicated by **1 or more** of the following:
 - In the past year, individual or caregiver was unable to work due to lack of dependent care.
 - In the past year, individual or caregiver was unable to work more (additional) hours due to lack of dependent care.
 - In the past year, individual or caregiver missed medical appointments or could not get medications due to lack of dependent care.
 - In the past year, individual or caregiver missed nonmedical activities (eg, school, church, social activity) due to lack of dependent care.
- Depression risk, as indicated by **ALL** of the following(8):
 - In the past 2 weeks, individual had little interest or pleasure in normal activities on at least several days.
 - In the past 2 weeks, individual felt down, depressed, or hopeless on at least several days.

References

1. Scanlon A, Reinisch C. Social determinants of health. In: Harding MM, Kwong J, Hagler D, Reinisch C, editors. *Lewis's Medical-Surgical Nursing: Assessment and Management of Clinical Problems*. 12th ed. St. Louis, MO: Mosby; 2023:18-20.
2. Billioux A, Verlander K, Anthony S, Alley D. Standardized Screening for Health-Related Social Needs in Clinical Settings: the Accountable Health Communities Screening Tool. [Internet] National Academy of Sciences. 2017 May Accessed at: <https://nam.edu/>. [accessed 2025 Sep 12]
3. Addressing social determinants of health. In: Perez R, editor. *CMSA's Integrated Case Management*. 2nd ed. Springer Publishing Company LLC; 2023:62-75.
4. Sandel M, et al. Unstable housing and caregiver and child health in renter families. *Pediatrics* 2018;14(2):e20172199. DOI: 10.1542/peds.2017-2199.
5. Children's HealthWatch Survey. Screening Instrument [Internet] Children's HealthWatch. 2024 Feb 13 Accessed at: <https://childrenshealthwatch.org/>. [accessed 2025 Mar 31]
6. PRAPARE®: Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences Screening Tool. 2.0 [Internet] Association of Asian Pacific Community Health Organizations (AAPCHO) and National Association of Community Health Centers (NACHC). 2025 Accessed at: <https://prapare.org/the-prapare-screening-tool/>. [accessed 2025 Sep 08]
7. Cook JT, et al. A brief indicator of household energy security: associations with food security, child health, and child development in US infants and toddlers. *Pediatrics* 2008;122(4):e867-75. DOI: 10.1542/peds.2008-0286.
8. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. *Medical Care* 2003;41(11):1284-92. DOI: 10.1097/01.MLR.0000093487.78664.3C.

Stable chest findings

- Stable chest findings over past 24 hours, as indicated by **ALL** of the following(1):
 - Pleural effusion absent or stable for treatment at next level of care(2)
 - No stridor or gross hemoptysis
 - Pneumothorax absent or stable for treatment at next level of care(3)(4)
 - Postoperative changes (if present) stable for next level of care
 - No evidence of new infection or other chest complications

References

1. Wald O, Izhar U, Sugarbaker DJ. Lung, chest wall, pleura and mediastinum. In: Townsend CM, Beauchamp RD, Evers BM, Mattox KL, editors. *Sabiston Textbook of Surgery*. 21st ed. Elsevier; 2022:1584-1640.e1.
2. Broaddus VC, Light RW. Pleural effusion. In: Broaddus VC, et al., editors. *Murray & Nadel's Textbook of Respiratory Medicine*. 7th ed. Elsevier Saunders; 2022:1498-1523.e13.
3. Haider SK, Vemana AP. Pneumothorax. In: Kliegman RM, et al., editors. *Nelson Textbook of Pediatrics*. 22nd ed. Elsevier; 2025:2703-2707.
4. Hallifax R, Rahman NM. Pneumothorax. In: Broaddus VC, et al., editors. *Murray & Nadel's Textbook of Respiratory Medicine*. 7th ed. Elsevier Saunders; 2022:1539-1550.e4.

Tachycardia absent

- Tachycardia[A][B] absent, as indicated by **1 or more** of the following:
 - Heart rate less than or equal to 100 beats per minute in adult[A][B](1)
 - Heart rate less than or equal to 85 beats per minute in child 13 to 17 years of age[A][B](2)

- Heart rate less than or equal to 95 beats per minute in child 6 to 12 years of age[A][B](2)
- Heart rate less than or equal to 110 beats per minute in child 1 to 5 years of age[A][B](2)
- Heart rate less than or equal to 120 beats per minute in infant 3 to 11 months of age[A][B](2)
- Heart rate less than or equal to 150 beats per minute in infant 1 or 2 months of age[A][B](2)

References

1. Schriger DL. Approach to the patient with abnormal vital signs. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:32-35.
2. Anderson CC, Kapoor S, Mark TE. Pediatric parameters and equipment. In: Anderson CC, Kapoor S, Mark TE, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 23rd ed. Elsevier; 2024:i-iii.

Footnotes

- A. Criteria based upon clinician acquired numeric values (eg, vital signs, oxygen saturation) should be used if they are accurate reflections of the patient's condition. Transitory findings (eg, abnormal only upon initial emergency department intake or only one time out of multiple readings) that rapidly improve with no or minimal treatment usually do not reflect disease severity or risk for deterioration. This does not imply that an initial or one-time reading cannot ever be applicable. The goal is to separate erroneous or incidental findings from those that truly represent the patient's clinical picture.
- B. Interpretation of heart rate requires clinical judgment and consideration of several patient-specific factors, such as the patient's baseline heart rate, medications, and clinical impact. For example, an elderly patient on a beta-blocker medication with a baseline resting heart rate of 60 beats per minute may be clinically tachycardic at a heart rate of 94 beats per minute. Likewise, a patient who is upset, in pain, or nervous in the emergency department with a heart rate of 106 beats per minute may meet the technical definition of tachycardia, but this tachycardia (absent associated findings such as chest pain or hypotension) may not be clinically important. The numeric values included in this definition are provided to allow for consistency in terms of a technical definition of the term tachycardia. Whether a heart rate above or below the technical threshold is clinically meaningful is a matter of persistence, context, and clinical judgment.

Tachypnea absent

- Tachypnea[A][B] absent, as indicated by **1 or more** of the following:
 - Respiratory rate less than or equal to 20 breaths per minute in adult[A][B](1)
 - Respiratory rate less than or equal to 18 breaths per minute in child 13 to 17 years of age[A][B](2)
 - Respiratory rate less than or equal to 22 breaths per minute in child 6 to 12 years of age[A][B](2)
 - Respiratory rate less than or equal to 25 breaths per minute in child 3 to 5 years of age[A][B](2)
 - Respiratory rate less than or equal to 30 breaths per minute in child 1 or 2 years of age[A][B](2)
 - Respiratory rate less than or equal to 40 breaths per minute in infant 6 to 11 months of age[A][B](2)
 - Respiratory rate less than or equal to 45 breaths per minute in infant 3 to 5 months of age[A][B](2)
 - Respiratory rate less than or equal to 55 breaths per minute in infant 1 or 2 months of age[A][B](2)

References

1. Schriger DL. Approach to the patient with abnormal vital signs. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:32-35.
2. Anderson CC, Kapoor S, Mark TE. Pediatric parameters and equipment. In: Anderson CC, Kapoor S, Mark TE, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 23rd ed. Elsevier; 2024:i-iii.

Footnotes

- A. Criteria based upon clinician acquired numeric values (eg, vital signs, oxygen saturation) should be used if they are accurate reflections of the patient's condition. Transitory findings (eg, abnormal only upon initial emergency department intake or only one time out of multiple readings) that rapidly improve with no or minimal treatment usually do not reflect disease severity or risk for deterioration. This does not imply that an initial or one-time reading cannot ever be applicable. The goal is to separate erroneous or incidental findings from those that truly represent the patient's clinical picture.
- B. Interpretation of respiratory rate requires clinical judgment and consideration of several patient-specific factors, such as the patient's baseline respiratory rate and whether the respiratory rate is indicative of significant underlying respiratory or other pathology. A mildly increased respiratory rate (eg, 20 to 22 breaths per minute in an adult), absent other indications of serious illness (eg, hypoxemia, metabolic acidosis, decreased tidal volume, pain), may be transitory and not clinically important. The numeric values included in this definition are provided to allow for consistency in terms of a technical definition of the term tachypnea. Whether a respiratory rate above the technical threshold is clinically meaningful is a matter of persistence, context, and clinical judgment. In addition, the measurement of the respiratory rate is subject to error. A medical textbook states that because there can be significant breath-to-breath variation in respiratory rate, the rate should be assessed for at least 30 seconds, preferably for a full minute.(1) This same textbook also states that new technologies designed to measure the respiratory rate have not proved to be clinically useful.(1)

Temperature status acceptable

- Temperature status acceptable, as indicated by **1 or more** of the following(1)(2)(3):
 - Temperature less than 100.5 degrees F (38.1 degrees C) (oral) and greater than 96.8 degrees F (36 degrees C) (rectal)
 - Temperature as expected for disease process and appropriate for management at next level of care

References

1. Nield LS, Kamat D. Fever. In: Kliegman RM, et al., editors. Nelson Textbook of Pediatrics. 22nd ed. Elsevier; 2025:1640-1642.
2. Melia MT. Approach to fever or suspected infection in the normal host. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:1845-1851.
3. Sifri CD. Approach to fever and suspected infection in the immunocompromised host. In: Goldman L, Cooney KA, editors. Goldman-Cecil Medicine. 27th ed. Elsevier; 2024:1851-1862.

Urinary status acceptable

- Urinary status acceptable, as indicated by **1 or more** of the following(1)(2):
 - Adequate spontaneous voiding (eg, no severe urinary retention)
 - Urinary catheter and management regimen in place that is performable at next level of care

References

1. Seifter JL. Urinary tract obstruction. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. Harrison's Principles of Internal Medicine. 21st ed. McGraw Hill Education; 2022:2373-2376.
2. Nakada SY, Knoedler MA, Best SL. Management of upper urinary tract obstruction. In: Dmochowski RR, et al., editors. Campbell Walsh Wein Urology. 13th ed. Elsevier; 2026:1903-1941.e8.

Vascular, soft tissue, and wound status acceptable

- Vascular, soft tissue, and wound status acceptable, as indicated by **1 or more** of the following(1)(2)(3)(4):
 - No vascular, soft tissue, or wound problems
 - Status acceptable, as indicated by **ALL** of the following:
 - No significant ischemia
 - No Bacteremia
 - No evidence of compartment syndrome
 - Neuromotor function at baseline or expected level of recovery and appropriate for management at next level of care
 - No new wound dehiscence or hematoma that cannot be managed at next level of care
 - Tissue necrosis absent, or treatment plan appropriate for next level of care
 - Vascular, soft tissue, and wound management appropriate for next level of care

References

1. Creager MA, Loscalzo J. Arterial diseases of the extremities. In: Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson JL, editors. Harrison's Principles of Internal Medicine. 21st ed. McGraw Hill Education; 2022:2107-2115.
2. Raja AS. Peripheral vascular trauma. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:429-437.e2.
3. Simon BC, Hern HG. Wound management principles. In: Walls RM, editor. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. Elsevier; 2023:651-665.e2.
4. Osborn PM, Schmidt AH. Diagnosis and management of acute compartment syndrome. Journal of the American Academy of Orthopedic Surgeons 2021;29(5):183-188. DOI: 10.5435/JAAOS-D-19-00858.