

Pancreatectomy

ORG: S-1200 (ISC)

[Link to Codes](#)

MCG Health

Inpatient & Surgical Care
30th Edition

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Care Planning - Inpatient Admission and Alternatives

Clinical Indications for Procedure

- Procedure is indicated for **1 or more** of the following(1)(2):**NNNNN**
 - ☐ Mass in head of pancreas and **ALL** of the following(12):
 - No distant metastases
 - No nodal involvement beyond field of resection
 - Encasement of superior mesenteric artery absent or not greater than 180 degrees
 - No abutment to celiac axis
 - No unreconstructable superior mesenteric or portal vein occlusion (eg, suitable vessel proximal and distal)
 - No aortic invasion or encasement

- ☐ Mass in body of pancreas and **ALL** of the following(12):
 - No distant metastases
 - No nodal involvement beyond field of resection
 - Encasement of superior mesenteric artery or celiac axis absent or not greater than 180 degrees, or encasement is greater than 180 degrees but gastroduodenal artery is uninvolved
 - No unreconstructable superior mesenteric or portal vein occlusion (eg, suitable vessel proximal and distal)
 - No aortic invasion
- ☐ Mass in tail of pancreas and **ALL** of the following(12):
 - No distant metastases
 - No nodal involvement beyond field of resection
 - Encasement of superior mesenteric artery or celiac axis absent or not greater than 180 degrees, or encasement is greater than 180 degrees but gastroduodenal artery is uninvolved
- ☐ Ampullary cancer and **ALL** of the following(13):
 - No distant metastases
 - No nodal involvement beyond field of resection
 - Serous cystic neoplasm 4 cm or larger causing symptoms (eg, pancreatitis, pain, obstructive jaundice)(1)(4)
 - Mucinous cystic neoplasm(1)(4)
 - Intraductal papillary mucinous neoplasm judged to be at risk for malignant transformation (eg, high-risk or worrisome imaging findings (eg, involvement of main pancreatic duct, cyst growth, solid enhancing mural nodule), high-risk genetic mutation, concerning cytologic features, symptomatic, new-onset diabetes, elevation of CA 19-9)(1)(4)
 - Need for excision of pancreatic remnant (eg, postpancreatectomy acute necrotizing pancreatitis, uncontrollable postoperative pancreatic fistula, fistula-associated hemorrhage)(8)(14)
- ☐ Chronic pancreatitis and **ALL** of the following(5)(6)(7):
 - Chronic pain is causing impaired quality of life.
 - All other measures for pain management have failed.
 - Imaging shows pancreatic ductal anatomy that is best treated with resection rather than drainage.
 - Need for re-excision to achieve negative margins(2)(9)
 - Extensive pancreatic trauma (eg, proximal transection, massive disruption of pancreatic head)(10)(11)

Alternatives to Procedure

- Alternatives include(1)(2):
 - For pancreatic cancer that is unresectable, or patient who is inoperable or does not consent to surgical treatment: combined irradiation and chemotherapy, stereotactic body radiotherapy, or immunotherapy(2)(12)
 - Palliative cholecystojejunostomy, choledochojejunostomy, or hepaticojejunostomy for biliary obstruction; gastrojejunostomy for gastric outlet obstruction
 - Palliative percutaneous or endoscopic stent placement(15)
 - Palliative celiac injections, celiac plexus radiation or radiosurgery, celiac plexus neurolysis for pain control(2)(15)
 - For asymptomatic mucinous cystic neoplasm less than 3 cm: active surveillance with serial imaging(4)
 - For selected neuroendocrine and benign tumors or cysts: enucleation or endoscopic ablation(4)(16)(17)(18)(19)
 - For selected nonfunctioning small (less than 2 cm) neuroendocrine tumors: active surveillance (eg, imaging every 6 to 12 months)(16)(17)(18)
 - For unresectable neuroendocrine tumors: somatostatin analogue, chemotherapy, targeted drugs (eg, mTOR inhibitor or multiple tyrosine kinase inhibitor), peptide receptor radionuclide therapy, ablation, or embolization(17)(18)
 - For selected side branch intraductal papillary mucinous neoplasm: active surveillance with serial imaging(1)

- o For selected pancreatic trauma: nonoperative management (eg, stent or pancreatic drain placement, fluid support, pain control, vital sign monitoring)(11)
- o For chronic pancreatitis: surgical drainage or endoscopic procedure (eg, pancreaticojejunostomy, stent placement), or medical therapies (eg, alcohol and smoking cessation, analgesic agents, celiac plexus block, pancreatic enzyme replacement therapy)(5)(6)(20)
- o For ampullary cancer: endoscopic or surgical ampullectomy(13)
- o Palliative care or hospice(2)(21)

Operative Status Criteria

Goal Length of Stay: 5 days postoperative

- Inpatient

Hospitalization

Optimal Recovery Course

Day	Level of Care	Clinical Status	Activity	Routes	Interventions	Medications
1	• OR to ICU or intermediate care[A] • Social Determinants of Health Assessment • Adult Readmission Risk Assessment • Pancreatectomy: Readmission Risk Assessment • Discharge planning	• Clinical Indications met[B]	• Bed rest • Possible limited ambulation postoperatively	• IV fluids • IV medications	• Possible drainage tubes, peripancreatic drains, and NG tube • Extubate postoperatively • DVT prophylaxis	• Multimodal analgesia, possible epidural analgesics or PCA • Perioperative antibiotics • Antiemetic prophylaxis for postoperative nausea and vomiting • Possible mu-opioid receptor antagonist[C]
2	• ICU or intermediate care • Social Determinants of Health Assessment • Adult Readmission Risk Assessment • Pancreatectomy: Readmission Risk Assessment	• Hypotension absent • Extubated	• Activity as tolerated	• IV fluids • IV medications	• Monitor glucose, minerals, and electrolytes closely • DVT prophylaxis	• Multimodal analgesia • Discontinue perioperative antibiotics • Possible mu-opioid receptor antagonist

3	- Intermediate care - Social Determinants of Health Assessment - Adult Readmission Risk Assessment - Pancreatectomy: Readmission Risk Assessment	Tachycardia absent	Progressive ambulation	Introduce sips of water and ice chips - IV fluids - IV medications	NG tube absent Peripancreatic drain absent - DVT prophylaxis	- Multimodal analgesia - Possible mu-opioid receptor antagonist
4	- Floor - Social Determinants of Health Assessment - Adult Readmission Risk Assessment - Pancreatectomy: Readmission Risk Assessment	No evidence of ileus or bowel obstruction	Ambulatory	Clear liquid diet - IV fluids - IV medications	Central lines absent - DVT prophylaxis	- Multimodal analgesia - Possible mu-opioid receptor antagonist
5	- Floor - Social Determinants of Health Assessment - Adult Readmission Risk Assessment - Pancreatectomy: Readmission Risk Assessment - Possible discharge[D]	No evidence of postoperative or surgical site infection Pain absent or managed	Ambulatory	Oral hydration Oral medications - Oral diet, as tolerated	DVT prophylaxis	Parenteral analgesics and PCA absent[E]

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|---|--|--|---|--|---|
| <ul style="list-style-type: none"> • Social Determinants of Health Assessment • Adult Readmission Risk Assessment • Pancreatectomy: Readmission Risk Assessment • Floor to discharge • Complete discharge planning | <ul style="list-style-type: none"> • Hemodynamic stability • Digestive regimen adjusted and diet tolerated • No evidence of ileus or bowel obstruction • No evidence of postoperative or surgical site infection • Blood glucose under acceptable control for next level of care • Electrolyte abnormalities absent or acceptable for next level of care • Pain absent or managed • Discharge plans and education understood | <ul style="list-style-type: none"> • Ambulatory or acceptable for next level of care | <ul style="list-style-type: none"> • Oral hydration[F] • Oral medications or regimen acceptable for next level of care • Oral diet or acceptable for next level of care | <ul style="list-style-type: none"> • DVT prophylaxis • Diabetic teaching | <ul style="list-style-type: none"> • Adjust insulin as needed • Pain control regimen for next level of care established • Pancreatic enzymes |
|---|--|--|---|--|---|

(1)(22)(23)(24)NN

Recovery Milestones are indicated in **bold**.

Goal Length of Stay: 5 days postoperative

Note: Goal Length of Stay assumes optimal recovery, decision making, and care. Patients may be discharged to a lower level of care (either later than or sooner than the goal) when it is appropriate for their clinical status and care needs.

Extended Stay

Minimal (a few hours to 1 day), Brief (1 to 3 days), Moderate (4 to 7 days), and Prolonged (more than 7 days).

- Extended stay beyond goal length of stay may be needed for(1)(14)(24):
 - Failure to meet discharge criteria (recovery milestones within final day in Optimal Recovery Course)
 - Expect brief stay extension.
 - Complications of procedure(29)
 - Postoperative abscess or infection
 - Anticipate parenteral antibiotics, percutaneous drainage, or surgical drainage.
 - Expect moderate stay extension.
 - Pancreatic or biliary leakage or fistula

- Patients who are smokers, malnourished, or undergoing open distal pancreatectomy may be at higher risk for fistula.(30)(31)
 - Expect moderate to prolonged stay extension.
- Delayed gastric emptying (eg, unable to tolerate diet)(32)(33)
 - Anticipate prolonged enteral feeding and possible percutaneous gastrostomy or jejunal feeding tube placement.
 - Expect brief stay extension.
- Delayed postoperative hemorrhage(34)
 - Anticipate diagnostic endoscopy, angiography, or CT angiogram.
 - Anticipate endoscopic therapy, catheter-directed embolization or covered stent placement, or surgical intervention.
 - Expect moderate stay extension.
- Bile leak(29)
 - Anticipate possible percutaneous drain, interventional radiology procedure, or reoperation.
 - Expect brief stay extension.
- Metabolic abnormalities after total pancreatectomy (eg, diabetes, malabsorption)(35)
 - Expect minimal to brief stay extension.
- Care for comorbidities(36)
 - Patient with active comorbidities, such as diabetes mellitus, cardiovascular disease, and multiple trauma, may require continued inpatient care.
 - Expect brief to moderate stay extension.

See Common Complications and Conditions [ISC](#) for further information.

Discharge

Discharge Planning

- Discharge planning includes[G]:
 - Assessment of needs and planning for care, including(38)(39):
 - Develop and modify treatment plan (involving multiple providers) as needed.
 - Evaluate and address preadmission functioning as needed.
 - Evaluate and address psychosocial status issues as indicated. See Psychosocial Assessment [SR](#) for further information.
 - Evaluate and address social determinants of health (eg, housing, food). See Social Determinants of Health Screening Tool [SR](#) for further information.
 - Evaluate and address patient or caregiver preferences as indicated.
 - Identify skilled services needed at next level of care, with specific attention to:
 - Coordination of care with outpatient center (eg, infusion, radiation, dialysis, surgery)
 - Medication management, adherence instruction, and side effects assessment(40)
 - Nutrition and hydration management(41)(42)
 - Pain management
 - Wound or dressing management
 - Early identification of anticipated discharge destination; options include(39)(43):
 - Home; considerations include:
 - Home safety assessment. See Home Safety Assessment [SR](#) for further information.

☐ Patient safe to go home; examples include(44)(45)(46):

- Medical status stable for patient's condition
- Functional care can safely be provided with available resources.
- Mental status stable for patient's condition
- Medication availability confirmed and reconciliation complete
- Patient/caregiver education completed with written discharge instructions provided
- Community resources identified and referrals made, as needed
- Home care arranged, if indicated
- Necessary medical equipment delivery arranged or available in home, if indicated
- Necessary medical supplies ordered, or patient/caregiver can obtain, if indicated
- Access to follow-up care
- Self-management ability if appropriate. See Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) Assessment [SR](#) for further information.
- Caregiver need, ability, and availability
- Post-acute skilled care or custodial care as indicated. See Discharge Planning Tool [SR](#) for further information.

○ Transitions of care plan complete, including(39)(43)(47):

- Patient and caregiver education complete.
 - See Teach-Back Tool [SR](#) for further information.
 - See Pancreatectomy: Patient Education for Clinicians [SR](#) for further information.

☐ Medication reconciliation completion includes(40)(48):

- Compare patient's discharge list of medications (prescribed and over-the-counter) against provider's admission or transfer orders.
- Assess each medication for correlation to disease state or medical condition.
- Report medication discrepancies to prescribing provider, attending physician, and primary care provider, and ensure accurate medication order is identified.
- Provide reconciled medication list to all treating providers.
- Confirm that patient or caregiver can acquire medication.
- Educate patient and caregiver.
 - Provide complete medication list to patient and caregiver.
 - Importance of presenting personal medication list to all providers at each care transition, including all provider appointments
 - Reason, dosage, and timing of medication (eg, use "teach-back" techniques)(49)
- Encourage communication between patient, caregiver, and pharmacy for obtaining prescriptions, setting up home medication delivery, and reviewing for drug-drug interactions.
- See Medication Reconciliation Tool [SR](#) for further information.
- Plan communicated to patient, caregiver, and all members of care team, including(50):
 - Inpatient care and service providers
 - Primary care provider
 - All post-discharge care and service providers
- Appointments planned or scheduled, which may include:
 - Primary care provider(51)
 - Chemotherapy or radiation therapy(42)
 - Dietitian

- Endocrinologist(52)
- Gastroenterologist
- General surgeon
- Oncologist
- Palliative or end-of-life care provider(53)
- Radiation oncologist
- Specialists for management of comorbidities as needed
- Other
- Outpatient testing and procedure plans made, which may include:
 - Laboratory testing
 - Other
- Referrals made for assistance or support, which may include:
 - Community services
 - End-stage disease planning(53)
 - Financial, for follow-up care, medication, and transportation
 - Self-help or support groups
 - Social services (eg, social programs, advance directives)
 - Tobacco use treatment(54)
 - Other
- Medical equipment and supplies coordinated (ie, delivered or delivery confirmed), which may include:
 - Antiembolic or compression stockings
 - Glucose monitoring supplies (eg, lancets, wipes, glucometer, test strips)
 - Syringes and needles for subcutaneous injections
 - Weight scale
 - Wound care equipment and supplies(55)
 - Other

Discharge Destination

- Post-hospital levels of admission may include:
 - Home.
 - Home healthcare. See Home Care Indications for Admission Section [HC](#) in Pancreatectomy guideline in Home Care.
 - Recovery facility care. See Recovery Facility Care Indications for Admission Section [RFC](#) in Pancreatectomy guideline in Recovery Facility Care.

Evidence Summary

Criteria

The evidence for the clinical indications found in this guideline includes 10 published peer reviewed articles, 1 specialty society or other evidence-based guideline, and 2 book sections.

For resectable pancreatic or ampullary neoplasia, a textbook, a specialty society guideline, and evidence-based review articles state that pancreatectomy is indicated for diagnosed or suspected malignancy or for nonmalignant cysts judged to have potential to transform into malignancy.(1)(2)(3)(4) **(EG 2)**

For chronic pancreatitis with intractable pain not amenable to drainage, evidence-based specialty society guidelines state that pancreatectomy is the only available cure and that earlier intervention is associated with greater long-term pain relief.(5)(6)(7) **(EG 2)**

For excision of pancreatic remnant, a general surgery textbook and a retrospective review state that completion pancreatectomy may be indicated after distal pancreatectomy complicated by uncontrolled fistula, acute necrotizing pancreatitis, or fistula-associated hemorrhage.(1)(8) **(EG 2)**

Specialty society guidelines and a review article state that pancreatectomy may be necessary in cases of pancreatic trauma or to achieve negative margins despite previous resection.(2)(9)(10)(11) **(EG 2)**

A specialty society guideline recommends that pancreatectomy be performed at a high-volume center (15 or more procedures per year).(2) **(EG 2)**

Hospitalization

Readmission risk and reduction: Database analysis of 1173 patients undergoing pancreaticoduodenectomy found, after multivariate adjustment, that pancreatic fistula was an independent predictor of readmission.(25) **(EG 2)** Analysis of 220 patients who underwent pancreatectomy found, after multivariate adjustment, that pancreatic fistula was an independent predictor of readmission.(26) **(EG 2)** Analysis of a cohort of 595 patients who underwent pancreatectomy (34% distal) found, after multivariate analysis, that independent predictors of 30-day readmission included pre-existing liver disease (eg, cirrhosis, chronic hepatitis) and need for postoperative drain placement.(27) **(EG 2)** A meta-analysis of 11 studies encompassing 19,976 patients (mean age 63 years) who were undergoing pancreaticoduodenectomy reported a 17.6% 30-day readmission rate and found, after adjustment, that independent risks for readmission included postoperative wound infection, venous thromboembolism, and intra-abdominal abscess.(28) **(EG 1)**

Length of Stay

Analysis of 5581 patients (mean age 61 years) undergoing distal pancreatectomy (49% open) from the National Surgical Quality Improvement Program (NSQIP) database reported a median hospital stay of 5 days.(23) **(EG 2)** Analysis of national hospital discharge data shows 47% of hospitalized patients undergoing a principal procedure of laparoscopic pancreatectomy were discharged in 4 days or less.(24) **(EG 3)** Analysis of national hospital discharge data shows 31% of hospitalized patients undergoing a principal procedure of open pancreatectomy were discharged in 5 days or less.(24) **(EG 3)**

Rationale

Use of this MCG care guideline helps the clinician identify, for a given procedure, which patient-specific factors and clinical conditions are appropriate for that procedure. The evidence-based clinical criteria assist the clinician in the decision to appropriately perform a procedure, evaluating whether the potential benefits of a procedure outweigh the potential risks. For Medicare enrollees, surgical MCG care guidelines also identify which procedures CMS has designated as inpatient only.

Use of these evidence-based clinical criteria to support decision making around the need for a given procedure is of benefit to the patient, as all procedures come with inherent risk that must be balanced by anticipated clinical benefit. Utilizing evidence-based clinical criteria enables a more accurate and patient-specific decision-making process. In addition, the use of evidence-based guidelines can help reduce unwarranted variation in care, such as divergent clinical thresholds to perform a procedure for clinically similar patients that vary across geographic regions, between facilities, and among individual clinicians.

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(56); 42 CFR 419.22(57); 42 CFR 422.101(58)

Internet-Only Manual (IOM) Citations: CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 1 - Inpatient Hospital Services Covered Under Part A(59); CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 6 - Hospital Services Covered Under Part B(60); CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 15 - Covered Medical and Other Health Services(61); CMS IOM Publication 100-08, Medicare Program Integrity Manual, Chapter 6, Section 6.5 - Medical Review of Inpatient Hospital Claims for Part A Payment(62)

Medicare Coverage Determinations: Medicare Coverage Database(63)

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Footnotes

- [A] See Intensive, Intermediate, and Telemetry Care Guidelines  ISC for further information. [A in Context Link 1]
- [B] See Clinical Indications for Procedure in this guideline. [B in Context Link 1]
- [C] Alvimopan reduces the risk of postoperative ileus and can shorten its duration.(22) [C in Context Link 1]
- [D] Patients undergoing laparoscopic pancreatectomy may be ready for discharge.(23)(24) [D in Context Link 1]
- [E] Use Multimodal analgesia or individual analgesic agent as indicated. [E in Context Link 1]
- [F] Some patients may have their hydration needs met via alternative means (eg, percutaneous endoscopic gastrostomy tube). [F in Context Link 1]
- [G] Discharge instructions should be given in the patient's and caregiver's native language using trained language interpreters whenever possible.(37) [G in Context Link 1]

Definitions

Adult Readmission Risk Assessment

- Risk of readmission is increased by presence (upon admission or during hospital stay) of **1 or more** of the following(1):
 - Acute kidney injury (ie, rise in serum creatinine 2 or more times baseline value within past 7 days)(1)
 - Clinically significant comorbid illness that necessitates (during current hospital stay) new or intensified treatment, prolongs length of stay, or impacts discharge level of care (eg, heart failure, COPD, active malignancy, cirrhosis, dementia, psychosis)(1)(2)(3)
 - Infection complicated by bacteremia or hypotension(1)
 - Need for parenteral nutrition or supplemental enteral tube feeding (eg, via gastrostomy tube or jejunostomy tube)(1)
 - Need for transfusion of platelets or red blood cells(1)
 - New need for dialysis(1)
 - Potential barriers to postdischarge clinical care (eg, homelessness, lack of transportation, impaired access to care or medication, active substance abuse)(1)
 - Frailty (ie, as indicated by a frailty measurement tool)[A][B](1)(4)(5)(6)
 - Two or more emergency department visits and/or inpatient admissions within previous 6 months(1)(7)

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Footnotes

- A. There are numerous measurement tools used to assess for frailty. Some of the more commonly used scales (with score indicating frailty in parentheses) include the following: Frailty Phenotype (3 or higher), 40-item Frailty Index (0.25 or higher), Study of Osteoporotic Fracture Index (2 or higher), Edmonton Frail Scale (8 or higher), FRAIL Scale (3 or higher), Clinical Frailty Scale (5 or higher), and Tilburg Frailty Indicator (5 or higher).(4)
- B. Frailty may be described as a phenotype or as an accumulation of health deficits. The Fried phenotype delineates a clinical syndrome resulting from altered metabolism coupled with abnormal stress responses.(5) This model includes 5 characteristic features: exhaustion (energy level), weakness (hand grip strength), slowness (gait speed), physical inactivity (falls), and weight loss.(5)(6) The presence of 3 or more of these deficits indicates the presence of frailty.(5)(6) Frailty as deficit accumulation considers findings in multiple domains (eg, cognitive, physical, nutritional, laboratory) and high-risk comorbidities.(5)(6) In this model, the degree of frailty is quantified by the number of indicative items present.(5)

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

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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

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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.

Multimodal analgesia

- Multimodal analgesia involves the utilization of 2 or more analgesic agents with different mechanisms of action in order to provide additive or synergistic pain control, while minimizing side effects and reliance on opioids.⁽¹⁾⁽²⁾⁽³⁾

References

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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

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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.

Pancreatectomy: Readmission Risk Assessment

- Risk of readmission is increased by presence of **1 or more** of the following⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾:
 - Pancreatic fistula⁽¹⁾⁽²⁾
 - Need for postoperative drain placement⁽³⁾⁽⁵⁾
 - Postoperative wound infection⁽⁴⁾
 - Venous thromboembolism⁽⁴⁾
 - Intra-abdominal abscess⁽⁴⁾

References

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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.

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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.

Codes

ICD-10 Diagnosis: C17.0, C24.0, C24.1, C25.0, C25.1, C25.2, C25.3, C25.4, C25.7, C25.8, C25.9, C78.89, D13.6, D13.7, D37.8, D49.0, K86.0, K86.1, K86.2, K86.3, K87, S36.200A, S36.201A, S36.209A, S36.220A, S36.221A, S36.229A, S36.230A, S36.231A, S36.239A, S36.240A, S36.241A, S36.249A, S36.250A, S36.251A, S36.259A, S36.260A, S36.261A, S36.269A, S36.290A, S36.291A, S36.299A [Hide]

ICD-10 Procedure: 0FBG0ZZ, 0FBG4ZG, 0FBG4ZZ, 0FBG8ZZ, 0FTG0ZZ, 0FTG4ZG, 0FTG4ZZ

CPT®: 48140, 48145, 48146, 48148, 48150, 48152, 48153, 48154, 48155

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