AGENDA

For a Regular Meeting of the

Santa Clara County Health Authority
Utilization Management Committee

Wednesday, October 17, 2018, 6:00-8:00 PM
Santa Clara Family Health Plan, Boardroom
6201 San Ignacio Ave., San Jose, CA 95119

1.	**Introduction**	Dr. Lin	6:00	5 min.
2.	**Meeting Minutes** Review minutes of the July 18, 2018 Utilization Management Committee meeting. Possible Action: Approve 07/18/18 minutes	Dr. Lin	6:05	5 min.
3.	**Public Comment** Members of the public may speak to any item not on the agenda; two minutes per speaker. The committee reserves the right to limit the duration of public comment to 30 minutes.	Dr. Lin	6:10	5 min.
4.	**CEO Update** Discuss status of current topics and initiatives.	Ms. Tomcala	6:15	10 min.
5.	**Old Business/Follow up items** Authorization data: gastro restrictive procedures Criteria for gastric bypass: BMI, age, diagnosis	Ms. Castillo	6:25	10 min.
6.	**Action Items**	Ms. Castillo	6:35	10 min.
	a. Prior Authorization Grid approval **Possible Action:** Approve Prior Authorization Grid			
	b. UM Program Evaluation 2017 (Cal MediConnect) **Possible Action:** Approve UM Program Evaluation			
7.	**Reports (MediCal/SPD, Healthy Kids)**			
	a. Membership	Dr. Robertson	6:45	5 min.
	b. UM Reports 2018	Ms. Carlson	6:50	10 min.
	i. Dashboard Metrics: Turn Around Time (Cal MediConnect/ Medi-Cal)			
	ii. Standard Utilization: Metrics Powerpoint			
	c. HS.04.01 Reporting Quality Monitoring of Plan Auths, Denials etc. (Q3 18)	Ms. Castillo	7:00	5 min.

d. Referral Tracking	Ms. Castillo	7:05	5 min.
e. Nurse Advice Line Stats	Ms. Carlson	7:10	5 min.
f. Interrater Reliability (Medical & Behavioral Health Q3)	Dr. Boris	7:15	5 min.
8. **Behavioral Health UM Reports** i. Turn Around Time	Ms. Holm	7:20	10 min.
9. **Adjournment** Next meeting: Wednesday, January 16, 2019 6 p.m.	Dr. Lin	7:30	

Notice to the Public—Meeting Procedures

- Persons wishing to address the Committee on any item on the agenda are requested to advise the Recorder so that the Chairperson can call on them when the item comes up for discussion.
- In compliance with the Americans with Disabilities Act, those requiring accommodations in this meeting should notify Caroline Alexander 48 hours prior to the meeting at 408-874-1835.
- To obtain a copy of any supporting document that is available, contact Caroline Alexander at 408-874-1835. Agenda materials distributed less than 72 hours before a meeting can be inspected at the Santa Clara Family Health Plan offices at 210 E. Hacienda Avenue, Campbell.
- This agenda and meeting documents are available at www.scfhp.com

MINUTES
UTILIZATION MANAGEMENT COMMITTEE
July 18, 2018

Voting Committee Members	Specialty	Present Y or N
Jimmy Lin, MD, Chairperson	Internal Medicine	Y
Ngon Hoang Dinh, DO	Head and Neck Surgery	Y
Indira Vemuri, MD	Pediatrics	Y
Dung Van Cai, MD	OB/GYN	Y
Habib Tobaggi, MD	Nephrology	Y
Jeff Robertson, MD, CMO	Managed Care	Y
Ali Alkoraishi, MD	Adult and Child Psychiatry	Y

Non-Voting Staff Members	Title	Present Y or N
Christine Tomcala	CEO	Y
Lily Boris, MD	Medical Director	Y
Jana Castillo	Utilization Management Manager	Y
Sandra Carlson	Health Services Director	Y
Caroline Alexander	Administrative Assistant	Y
Sherry Holm	Behavioral Health Director	Y
Andrea Smith	Utilization Review and Discharge Planning Nurse	Y

ITEM	DISCUSSION	ACTION REQUIRED
I. /II. Introductions Review/Revision/Approval of Minutes	Meeting was started with a Quorum at 6:05 PM. There was a motion to approve the April 18, 2018 minutes.	Minutes approved as presented.
III. Public Comment	No public comment.	
IV. CEO Update	Christine Tomcala , CEO discussed the following items:	

ITEM	DISCUSSION	ACTION REQUIRED
	Health Plan will start moving to the new location in South San Jose July 27th. It will be a two phase move. July 30th will be the first day of business in the new location. CMS audit will start August 20th and will be via WebEx. Auditors will be onsite the week of September 3rd.	
V. Discussion/Follow up items	Discussion was had on time for future meetings in the new location. Committee unanimously decided to keep the meeting at the current time of 6 p.m.	
VI. Action Items	a. Care Coordinator Guidelines Ms. Castillo presented two new care coordinator guidelines. Outpatient physical therapy: Care coordinator can approve up to 12 visits. Requests exceeding 12 visits must be forwarded to the nurse for review. Wheelchair repair: Care coordinator can approve if wheelchair is 3 years old or less. After motion duly made, seconded, two new care coordinator guidelines were approved as presented. b. UM Program Evaluation 2017 Dr. Boris presented the 2017 UM Program Evaluation for Medi-Cal and Healthy Kids. Added findings in last column of evaluation.	Present UM Program Evaluation for Cal MediConnect at next UM Committee meeting.

ITEM	DISCUSSION	ACTION REQUIRED
VII. Reports	a. Membership Dr. Robertson presented the update on membership. As of July, membership is at 258,500. b. UM Reports 2018 i. Dashboard Metrics Dr. Boris presented the Dashboard Metrics report. Monitoring compliance based on turnaround time. Divided by lines of business. For CMC line of business, at 99.1% of compliance for routine requests, 97.2% compliant for expedited/urgent requests, 100% compliant for retro requests. For Medi-Cal line of business, 97.4% compliant for routine, urgent 97 %, retro 100%. ii. Standard Utilization Metrics Data is for April 1, 2017 to March 31, 2018. For MediCal/non SPD, discharges per thousand is at 3.76, with average length of stay 3.55. For Medi-Cal SPD discharges per thousand are at 15.07. Average length of stay 4.83. For CMC population 5.70 days average length of stay. Discharges per thousand 246.9. For NCQA Medicaid Benchmark Comparisons, Non SPD fall at less than 10%, SPD falls at greater than 90%. Combined total is 50th percentile ranking for average length of stay. Medi-Cal SPD's 180.9 discharges per thousand, CMC is at 246.9 per thousand. Average length of stay is 4.83 for Medi-Cal SPD and 5.70 for CMC. Inpatient Readmissions Medi-Cal Non SPD is at 14.6. Goal is around 11 to 12% for Non SPD population. SPD Inpatient Readmissions for Medi-Cal overall average of 21.8%. Readmissions on CMC at 15.6%. NCQA Benchmark comparison for CMC Readmissions: Ages 18 to 64 readmission rate of 19.93%; Ages 65+ readmission rate of 14.23%. For age 18 to 64, greater than 75th percentile ranking, age 65+, less than 50th percentile ranking. (Lower rate indicates better performance). Frequency of selected procedures: Back Surgery comparison to benchmark, lower. Mastectomy higher in females age 15 to 44, lower age 45-64. Bariatric surgery higher in females age 20 to 44, lower in males age 20 to 44. Medi-Cal Behavioral Health Metrics based on 3 areas: ADHD Medication, Antidepressant Medication Management, Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia. Initiation phase and continuation maintenance phase for ADHD Medication is at less than 10th percentile rank. Antidepressant Medication Management Acute Phase Treatment and Continuation Phase Treatment is at greater than 75th percentile rank. Cardiovascular Monitoring for People with Cardiovascular Disease & Schizophrenia is at greater than 90th percentile.	Pull authorization data for next UM Committee meeting. Present criteria for gastric bypass: BMI, age, diagnosis

ITEM	DISCUSSION	ACTION REQUIRED

c. HS 04.01 Reporting Quality Monitoring of Plan Auths, Denials etc. (Q2 18)
Ms. Castillo presented the Q2 2018 Quality Monitoring Report. Santa Clara Family Health Plan (SCFHP) completed the 2nd quarter review for timely, consistent, accurate and understandable notification to members and providers regarding adverse determinations. For the 2nd Quarter review of 2018, the findings are as follows:

A. For the dates of services and denials for January, February and March of CY 2018 were pulled in the 1st quarter sampling year.
   a. 30 unique authorizations were pulled with a random sampling.
      i. 57% or 17/30 Medi-Cal LOB and 43% or 13/30 CMC LOB
      ii. Of the sample 100% or 30/30 were denials
      iii. Of the sample 27% or 8/30 were expedited request; 73% or 22/30 were standard request.
         1. 100% or 8/8 of the expedited authorizations met regulatory turnaround time of 72 calendar hours
         2. 65% or 15/20 of the standard authorizations met regulatory turnaround time (5 business days for Medi-Cal LOB and 14 calendar days for CMC LOB)
      iv. 63% or 19/30 are medical denials, 37% or 11/30 are administrative denials
      v. 100% or 30/30 of cases were denied by MD or pharmacist.
      vi. 100% were provided member and provider notification.
      vii. 90% or 28/30 of the member letters are of member's preferred language.
      viii. 100% of the letters were readable and rationale for denial was provided.
      ix. 100% of the letters included IMR information, interpreter rights and instructions on how to contact CMO or Medical Director.

Manager of Utilization Management and Director of Health Services reviewed the findings of this audit and recommendations from that finding presented to UMC are as follows:

- Continue QA report monitoring process
- Manage reviews to meet turnaround time requirements

ITEM	DISCUSSION	ACTION REQUIRED
	d. Referral Tracking Ms. Castillo presented the Referral Tracking report for Q218. Required to have a rolling report for any authorizations that does not have a claim attached. Looking at lag time of claims. Need to follow up on why service was not rendered if no claim attached. At end of year will conduct outreach calls to members who have not had services rendered yet. In January, 64% of all authorizations had services rendered for all lines of business. Total number of authorized services not rendered is at 5,727. Percentage of authorizations with no services rendered is 45.2%. e. Procedure for documentation requirements for Prior Authorization when no clinical notes attached Ms. Castillo presented the procedure for documentation requirements when no clinical notes are attached to an authorization request. Any requests without clinical documentation, UM staff makes 3 documented attempts to acquire necessary documentation for review before considering denial for insufficient information. This avoids unnecessary denials. f. Nurse Advice Line Stats Ms. Carlson presented the Nurse Advice Line Stats. Medi-Cal received 2,024 calls, Healthy Kids 50 calls, Cal MediConnect calls 93 during the first quarter of 2018. For Medi-Cal the highest number of dispositions rendered was see provider within 24 hours, followed by home/self-care. For Cal MediConnect, see provider within 24 hours, followed by see ED immediately. For Health Kids, no services necessary, followed by see provider within 24 hours. Highest volume for Triage Guidelines used for call types: Medi-Cal-information only, abdominal pain, chest pain, allergic reactions Healthy Kids-information only, bites and stings Cal MediConnect- information only, abdominal pain	

ITEM	DISCUSSION	ACTION REQUIRED
VIII. Behavioral Health UM Reports	Turn Around Time	

ITEM	DISCUSSION	ACTION REQUIRED
	Ms. Holm presented an update on turnaround time. Discussion on ways to improve access to Cal MediConnect members. Required to place with follow up appointment within ten days of discharge. Dr. Alkoraishi mentioned Urgent Care for behavioral health is available at Valley Medical Center. Urgent Care is underutilized. Developmental Screening Summary Ms. Holm presented developmental screening summary. Encourage all children screening with age specific screening tools or age appropriate screening tool for developmental, behavioral, social delays. To be done during regularly scheduled well child visit appointments. Santa Clara Family Health Plan will pay the 96110 code as a Fee for Service to practitioner offices when billed with a well-child diagnosis to Independently contracted providers, PAMF, PMG, and PC. Next steps involve provider education, engagement of delegated provider networks, Valley Health Plan discussion and group discussion.	
IX. Adjournment	Meeting adjourned at 7:30 PM	
NEXT MEETING	The next meeting is scheduled for Wednesday, October 17, 2018, 6:00 PM	

Prepared by:

_____ Date _____

Caroline Alexander
Administrative Assistant

Reviewed and approved by:

_____ Date _____

Jimmy Lin, M.D.
Committee Chairperson

Gastric Bypass Report

Auth Seen Dates:		6/1/2018 - 8/31/2018				
AuthorizationID	AuthorizationStatus	CPTCode Requested		LineOfBusiness	Member Age	BMI
A0040752	APPROVED	43644	LAPS GSTR RSTCV PX W/BYP ROUX-EN-Y LIMB <150 CM	Medi-Cal	26	63
A0041351	APPROVED	43644	LAPS GSTR RSTCV PX W/BYP ROUX-EN-Y LIMB <150 CM	Medi-Cal	30	47
A0041630	APPROVED	43644	LAPS GSTR RSTCV PX W/BYP ROUX-EN-Y LIMB <150 CM	Medi-Cal	59	53
A0043788	APPROVED	43644	LAPS GSTR RSTCV PX W/BYP ROUX-EN-Y LIMB <150 CM	Medi-Cal	31	63
A0044360	APPROVED	43644	LAPS GSTR RSTCV PX W/BYP ROUX-EN-Y LIMB <150 CM	Medi-Cal	43	41
A0045354	APPROVED	43644	LAPS GSTR RSTCV PX W/BYP ROUX-EN-Y LIMB <150 CM	Medi-Cal	49	39

Total: **6**

Gastric Restrictive Procedure with Gastric Bypass by Laparoscopy RRG

RRG: S-513-RRG (ISC)
Link to Codes

MCG Health
Inpatient & Surgical Care
22nd Edition

Clinical Indications for Procedure and Care

- Procedure indicated by **ALL** of the following:
  - Severity of obesity judged appropriate for procedure as indicated by **1 or more** of the following:
    - Patient has BMI[A] of 40 or greater. BMI Calculator
    - Patient has BMI[A] of 35 or greater and clinically serious condition related to obesity (eg, obesity hypoventilation, obstructive sleep apnea). BMI Calculator
    - Adult patient[B] has BMI[A] of 30 or greater with type 2 diabetes mellitus with inadequately controlled hyperglycemia (eg, hemoglobin A1c greater than 8% (64 mmol/mol) despite optimal medical treatment (eg, oral medication, insulin)).[C][D]
  - Patient is candidate for bariatric surgery as indicated by **ALL** of the following:
    - Failure to achieve and maintain significant weight loss with nonsurgical treatment
    - Correctable cause for obesity not identified (eg, endocrine disorder)
    - Patient has demonstrated reliable participation in preoperative weight-loss program that is multidisciplinary (eg, low-calorie diet, supervised exercise, behavior modification).
    - Current substance abuse not identified
    - Patient is fully grown or nearly fully grown.[E]
    - Expectation that patient will be able to adhere to postoperative care (eg, judged to be committed and able to participate in postoperative requirements)
    - Patient is receiving treatment in multidisciplinary program experienced in obesity surgery that can provide **ALL** of the following:
      - Surgeons experienced with procedure
      - Preoperative medical consultation and approval
      - Preoperative psychiatric consultation and approval
      - Nutritional counseling
      - Exercise counseling
      - Psychological counseling
      - Support group meetings

See Gastric Restrictive Procedure with Gastric Bypass by Laparoscopy ISC Optimal Recovery Guideline for further supporting sections.

Operative Status Assignment

Goal Length of Stay: 1 day postoperative

In some situations procedures that might otherwise be performed on an ambulatory basis may require inpatient care. In some cases this need can be identified preoperatively; in other cases this need is due to postoperative events or clinical findings (eg, failure to meet discharge readiness milestones).

See Discharge Readiness or Extended Stay section in this guideline, or Ambulatory Surgery Exception Criteria GRG, as appropriate.

- **Operative Status Criteria: Inpatient**

Level of Care Criteria

For patient conditions requiring more than routine inpatient care, documentation of need may be done using the [**Level of Care**] chart.

Intensive Care	Intermediate Care	Telemetry Care
• ICU admission may be indicated when need is demonstrated by **1 or more** of the following:	• Intermediate care admission may be indicated after intensive care treatment (eg, as "step-down" care),	• Telemetry admission[G] may be indicated for **1 or more** of the following:

- Vital sign abnormalities, including **1 or more** of the following:
  - Systolic arterial pressure less than 90 mm Hg, or 20 mm Hg below patient's usual pressure in adult or child 10 years or older
  - Systolic arterial blood pressure less than 70 mm Hg in infant (1 month to 1 year of age), or less than the sum of 70 mm Hg plus twice the patient's age in child 2 to 10 years of age
  - Diastolic arterial pressure greater than 120 mm Hg
  - Mean arterial pressure less than 70 mm Hg in adult[F]
  - Mean arterial pressure less than the sum of 40 mm Hg plus 1.5 times patient's age in child or adolescent[F]
  - Pulse less than 40 or greater than 140 beats per minute in adult or in adolescent 16 years or older
  - Pulse less than 90 or greater than 160 beats per minute in infant younger than 2 years
  - Pulse less than 70 or greater than 150 beats per minute in child 2 to 7 years of age
  - Respiratory rate greater than 35 or less than 8 breaths per minute in adult
- Laboratory findings (new), including **1 or more** of the following:
  - Saturation of arterial oxygen less than 90% or partial pressure of oxygen less than 60 mm Hg (8.0 kPa) despite oxygen supplementation
  - Rising partial pressure of carbon dioxide with acute or uncompensated respiratory acidosis
  - Arterial pH less than 7.2 or greater than 7.65
  - Serum sodium less than 110 mEq/L (mmol/L) or greater than 160 mEq/L (mmol/L)
  - Serum sodium less than 125 mEq/L (mmol/L) with Altered mental status, seizure, or respiratory arrest
  - Serum sodium more than 145 mEq/L (mmol/L) with Altered mental status, seizure, or severe dehydration requiring large-volume fluid resuscitation
  - Serum potassium less than 2 mEq/L (mmol/L) or greater than 7 mEq/L (mmol/L)
  - Serum potassium less than 2.5 mEq/L (mmol/L) with severe clinical or electrocardiogram manifestations (eg, paralysis, cardiac arrhythmia, delayed depolarization, flat T waves, or U waves)
  - Serum potassium greater than 6 mEq/L (mmol/L) with electrocardiogram changes of hyperkalemia (eg, peaked T waves, widened QRS, cardiac arrhythmia)
  - Serum calcium greater than 14 mg/dL (3.5 mmol/L)
  - Serum calcium greater than 12 mg/dL (3.0 mmol/L) with Altered mental status, severe volume depletion requiring large-volume IV fluid resuscitation, Hypotension, significant arrhythmia, heart block, or digitalis toxicity
  - Serum phosphorus less than 1 mg/dL (0.32 mmol/L)

or to provide higher level of care than general hospital ward (eg, as "step-up" care in absence of intensive care admission needs) (see Intensive Care Guidelines ISC), as indicated by **1 or more** of the following:

- Intermediate level monitoring or care needed as indicated by **1 or more** of the following:
  - Care requiring nurse-to-patient ratio of 1 to 2 or 1 to 3; examples include:
    - Complex wound management
    - Profound neuromuscular weakness
    - Postoperative high-risk patient with Hemodynamic stability
  - Frequent (but less frequent than hourly) monitoring, such as vital signs or neurologic checks
  - Stable chronic mechanical ventilator or long-term weaning needs
  - Noninvasive ventilation
  - Peritoneal dialysis
  - Frequent pulmonary therapy with endotracheal suctioning (nonintubated or chronic tracheostomy patient)
  - Rapid diuresis for fluid overload
  - Electrolyte, metabolic, or other problem requiring frequent laboratory testing or treatment adjustments
  - Monitoring of continuous high-level epidural anesthesia
  - Titration of IV vasodilator or antiarrhythmic agents
  - Continuous pulse oximetry monitoring
  - Patient who requires short-term inpatient monitoring (eg, cardiac, wound site, perfusion) after procedure as indicated by **1 or more** of the following:
    - Angioplasty
    - Pacemaker placement with cardiac conduction defect
    - Electrophysiologic studies with such procedures as ablation
    - Implantable cardiac defibrillator placement
- **General Surgery** diagnoses or procedures, including patient with postoperative Hemodynamic stability requiring **1 or more** of the following:
  - Cardiac disease, including **1 or more** of the following:
    - Post-acute MI
    - Low-risk patient with ST-segment elevation MI who has undergone successful percutaneous coronary intervention
    - Unstable angina
    - Suspected MI (until it is ruled out)
    - Post cardiac surgery (first 48 to 72 hours unless complications occur)
    - Dangerous arrhythmia [H] diagnosed or suspected
    - Firing of implantable cardioverter-defibrillator[I]
    - Suspected pacemaker or implantable cardioverter-defibrillator malfunction
    - New administration or adjustment of antiarrhythmic drug[J]
    - Acute myocarditis or pericarditis
    - Child admitted for acute congestive heart failure
    - High-risk ECG findings (eg, bifascicular block, bradycardia, abnormal QT interval, ventricular pre-excitation, other conduction abnormality)
    - New pathologic changes on ECG (eg, new Q waves)
    - Short-term monitoring after cardiac procedure as indicated by **1 or more** of the following[K]:
      - Electrophysiologic studies
      - Implantable cardioverter-defibrillator placement
      - Percutaneous coronary intervention with stent placement
      - Pacemaker placement with cardiac conduction defect
      - Arrhythmia ablation
  - Drug overdose or poisoning with substance that causes Bradycardia, arrhythmia, or QT prolongation (eg, beta-blockers, phenothiazines, sympathomimetic agents, cyclic antidepressants, digitalis, antiarrhythmic drugs)
    - Short-term cardiac monitoring after therapeutic or diagnostic procedure requiring conscious sedation or anesthesia (eg, endoscopy, percutaneous vascular procedures)
    - Acute cerebrovascular event[L]
    - Patients who have received massive blood transfusion (eg, 10 units of packed red blood

- Toxic drug level or poisoning causing or likely to cause neurologic abnormalities or Hemodynamic instability
- Less severe laboratory abnormalities contributing to **1 or more** of the following:
  - Seizure
  - Altered mental status
  - Muscle weakness or severe spasms
  - Arrhythmias
  - Hemodynamic instability
  - Other significant clinical manifestations

− Electrocardiogram (or cardiac monitoring) findings, including **1 or more** of the following:
- Inherently unstable or life-threatening arrhythmia (eg, sustained ventricular tachycardia, ventricular fibrillation, asystole)
- Arrhythmia causing Hypotension (eg, Bradycardia, Tachycardia)
- Complete heart block causing Hypotension
- Other findings indicative of need for intensive care (eg, acute cardiac ischemia, myocardial infarction)

− Physical findings, including **1 or more** of the following:
- Threatened airway
- Altered mental status that is severe or persistent
- Repeated or prolonged seizures
- New-onset anuria (urine output less than 0.1 mL/kg/hour over 4 hours)
- Cyanosis (new)
- Cardiac tamponade
- Status post respiratory or cardiac arrest
- Severe burns (eg, partial thickness burns over more than 10% of body surface, third-degree burns)
- Findings consistent with abdominal emergency (eg, peritoneal signs)

− Imaging findings, such as dissecting aneurysm or ruptured viscus

− Specific intervention or monitoring needed, as indicated by **1 or more** of the following:
- New need for assisted ventilation, invasive or noninvasive
- New need for intubation (eg, to protect airway)
- New tracheostomy (less than 48 hours old)
- Hourly vital signs or neurologic checks
- Pulmonary artery line monitoring needed
- Continuous arterial line monitoring needed
- Continuous IV vasoactive drugs
- Continuous IV antiarrhythmics
- Large volume IV fluid resuscitation (eg, greater than 6 L per day)
- Large or rapid transfusion needs (eg, more than 6 units within 24 hours)
- High-risk IV treatment, such as thrombolysis, hypertonic saline, or mannitol infusion
- Rapid desensitization for high-risk hypersensitivity reaction to required medication (eg, penicillin, monoclonal antibody)
- Acute cardiac pacing
- Intra-aortic balloon pump
- Ventricular assist device
- Close monitoring for first postoperative day (eg, due to risk of procedure, underlying comorbidity, need for frequent blood testing, or surgical or anesthetic complication)
- Fluid resuscitation because of major fluid shifts
- Extensive wound management
- Complex multiple injury care

cells in 24 hours) with Hemodynamic stability, no active bleeding, and low risk for rebleed.
- Short-term cardiac monitoring during and after treatment with medications that increase risk of arrhythmia or bradycardia (eg, lidocaine infusion for pain, neostigmine infusion for treatment of acute colonic pseudo-obstruction, phenytoin infusion for seizure without status epilepticus)

− Uncorrected electrolyte abnormalities associated with increased risk of dangerous arrhythmia[M]; indicated by **1 or more** of the following:
- Hyperkalemia with attributable ECG changes
- Potassium greater than 6.5 mEq/L (mmol/L) in patient without history of chronic renal disease
- Prolonged QT attributed to hypokalemia, hypomagnesemia, or hypocalcemia
- Other clinically significant electrolyte abnormality associated with increased risk of arrhythmia

− Unexplained syncope or other neurologic event suspected of being due to arrhythmia due to finding that increases risk; as indicated by **1 or more** of the following:
- Vital sign abnormality
- Tachypnea
- Altered mental status
- History of heart failure
- History of coronary artery disease
- History of structural heart disease (eg, hypertrophic cardiomyopathy, severe valvular disease, congenital heart disease, rheumatic heart disease)
- Patient reported palpitations or tachycardia preceding syncope.
- Syncope occurring during exercise
- Syncope sudden and without prodrome
- Syncope while supine
- Dangerous arrhythmia suspected as cause as indicated by **1 or more** of the following:
  - History of Dangerous arrhythmia
  - History of previous syncope due to arrhythmia
  - Use of medication known to cause Dangerous arrhythmia
  - Family history of sudden death

- Extracorporeal membrane oxygenation device
- Pericardiocentesis
- Hemodialysis in unstable patient
- Continuous renal replacement therapy (eg, continuous venovenous hemodialysis)
- Continuous fluid removal via hemofiltration (eg, continuous venovenous hemofiltration)
- Peritoneal dialysis initiation
- Emergency bronchoscopic therapy (eg, for hemoptysis)
- Emergency endoscopic therapy for bleeding
- Balloon tamponade for variceal bleeding
- Intracranial pressure monitoring or tissue oxygen monitoring
- Ventriculostomy monitoring
- Treatment of ongoing seizures
- Induced hypothermia or coma
- Ongoing frequent testing and treatment for acute conditions, including **1 or more** of the following:
  - Correction of severe metabolic acidosis or alkalosis
  - Frequent glucose checks (ie, more frequent than performable at lower level of care)
  - Severe fluid overload
  - Cerebral edema
  - Monitoring or suctioning for respiratory insufficiency or acidosis
  - Monitoring for active bleeding
- Other need for treatment or monitoring not available outside the ICU

− **Systemic conditions**, including **1 or more** of the following:

- Severe electrolyte or metabolic disturbance causing or likely to cause **1 or more** of the following:
  - Life-threatening cardiac dysrhythmia
  - Respiratory insufficiency
  - Altered mental status
  - Seizures
  - Hemodynamic instability
  - Muscular weakness
- Environmental injuries such as Hypothermia, hyperthermia, electrical injuries, or near drowning
- Anaphylaxis with respiratory compromise, Hypotension, or other end organ dysfunction
- Confirmed or suspected malignant hyperthermia as evidenced by exposure to volatile anesthetic agent or succinylcholine and **1 or more** of the following:
  - Hypermetabolism as evidenced by inappropriately increased CO_2 production, O_2 consumption, or acute mixed metabolic and respiratory acidosis
  - Unexplained Tachycardia
  - Cardiac tachyarrhythmias, ectopic ventricular beats or ventricular bigeminy
  - Masseter spasm
  - Muscle rigidity
  - Rapid increase in core body temperature
  - Presentation consistent with acute coronary syndrome (eg, suspicious chest pain)
  - Multiple syncopal episodes within last 6 months
  - Known channelopathy (eg, long QT syndrome, Brugada syndrome, or catecholaminergic paroxysmal ventricular tachycardia)
- Abnormal ECG as indicated by **1 or more** of the following:
  - High-risk ECG findings (eg, bifascicular block, bradycardia, abnormal QT interval, ventricular pre-excitation, other conduction abnormality)
  - New pathologic changes on ECG (eg, new Q waves)
  - Cardiac rhythm other than normal sinus

- Acute rise in serum potassium, creatine kinase, or myoglobin

- Neuroleptic malignant syndrome as evidenced by exposure to neuroleptic drug (eg, phenothiazine, butyrophenone) or dopamine-depleting drug (eg, alpha-methyltyrosine), or withdrawal of dopaminergic agent (eg, L-dopa, amantadine) and **1 or more** of the following:
  - Muscle rigidity
  - Hyperthermia
  - Altered mental status
  - Hemodynamic instability
  - Acute rise in creatine kinase
- Serotonin syndrome (serotonin toxicity) as evidenced by exposure to medication(s) that increases level of serotonin in CNS (eg, some antidepressants including serotonin reuptake inhibitors, monoamine oxidase inhibitors, opioids, stimulants, triptans, anticonvulsant agents, linezolid) and **1 or more** of the following:
  - Significant neurologic finding (eg, agitation, hypomania, hallucinations, Altered mental status)
  - Significant autonomic nervous system-related finding (eg, sweating, hyperthermia, tachycardia, vomiting)
  - Significant musculoskeletal findings (eg, myoclonus, hyperreflexia, tremor, rhabdomyolysis, elevated creatinine kinase)
- Severe alcohol withdrawal with **1 or more** of the following:
  - Hemodynamic instability
  - Cardiac arrhythmias of immediate concern
  - Uncontrolled seizures
  - Respiratory depression with need for, or high likelihood of requiring, mechanical ventilation
  - Need for anesthetic agent to control agitation (eg, dexmedetomidine, propofol, ketamine)
  - Delirium tremens as evidenced by **ALL** of the following:
    - Cessation of, or reduction in, heavy and prolonged alcohol use
    - Delirium (eg, fluctuating disturbance in attention, awareness, orientation, language)
    - Signs or symptoms of alcohol withdrawal as indicated by **2 or more** of the following:
      - Autonomic hyperactivity (diaphoresis, tachycardia, hypertension)
      - Tremor
      - Nausea or vomiting

- Hallucinations
- Increased anxiety
- Psychomotor agitation
- Generalized tonic-clonic seizures

− **General Surgery** diagnoses or procedures, including **1 or more** of the following:

- Acute abdominal catastrophe (eg, ischemic bowel, perforated viscus, abdominal compartment syndrome)
- Complications of any surgery requiring ICU intervention as indicated by **1 or more** of the following:
  - Hemodynamic instability
  - MI with complications (eg, severe arrhythmia, Hypotension)
  - Excessive bleeding or severe coagulopathy
  - Respiratory failure or insufficiency
  - Renal failure
  - Airway instability or obstruction
  - Neurologic deterioration
  - Infection with Hypotension or significant fluid shifts
- Multiple trauma with complicating features as indicated by **1 or more** of the following:
  - Serious injury involving more than one organ or system
  - Single organ injury requiring critical care intervention or monitoring (eg, invasive hemodynamic monitoring, frequent vital signs or neurologic checks)
  - Impending acute respiratory failure due to lung contusion, unstable chest wall, aspiration, hemorrhage, tension or open pneumothorax, or fat embolism
  - Facial or neck injury threatening airway patency
  - Cardiac contusion
  - Pericardial effusion
  - Bronchial tear
  - Hemodynamic instability
  - Rhabdomyolysis requiring large-volume IV fluid resuscitation
  - Other significant complicating feature
- Organ transplant
- Esophagectomy
- Pancreatectomy (eg, Whipple procedure)
- Necrotizing soft tissue infection (eg, necrotizing fasciitis, Fournier gangrene)
- Preoperative or postoperative patient requiring ICU intervention, such as hemodynamic optimization, pulmonary artery monitoring, mechanical ventilation, or extensive nursing care
- Obesity surgery patient with **1 or more** of the following:
  - ICU management needs for comorbid conditions (eg, airway issues due to severe sleep apnea)
  - Failed postoperative extubation

• Intraoperative complications (eg, perforated viscus, bleeding)		

Hospitalization

Goal Length of Stay: 1 day 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.

Discharge Readiness

- Discharge readiness is indicated by patient meeting Recovery Milestones, including **ALL** of the following:
  - **Hemodynamic stability**
  - **No evidence of postoperative or surgical site infection**
  - **Pain absent or managed**
  - **Ambulatory**
  - **Oral hydration, medications, and diet**
  - **Discharge plans and education understood**

See Gastric Restrictive Procedure with Gastric Bypass by Laparoscopy Optimal Recovery Course ISC for full optimal recovery management information.

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:
  - Conversion to open procedure
    - Expect brief stay extension.
  - Complications of procedure
    - Complications include anastomotic leaks causing peritonitis, thromboembolic disease, wound infection, suture line bleeding, pneumonia, respiratory failure, evisceration, and splenic injury.
    - Expect brief to moderate stay extension.
  - Clear liquid diet not tolerated
    - Expect brief stay extension.
  - Care for comorbidities
    - Patient with complex comorbidities such as chronic obstructive pulmonary disease, renal disease, or heart failure may require continued inpatient care.
    - Expect brief stay extension.
  - Other complication or condition, including:
    - Anemia
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Active blood loss absent
        - Signs and symptoms of anemia absent or improved
        - Mental status normal or at baseline
        - Hgb/Hct level stable and acceptable for next level of care
        - Etiology of anemia requiring inpatient care absent
    - Arrhythmia
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Arrhythmia evaluation completed
        - Reversible causes of arrhythmia eliminated or mitigated
        - Specific antiarrhythmia treatment initiated as appropriate
        - Anticoagulation requirements addressed (or anticoagulation not required). See Anticoagulation Requirement: Common Complications and Conditions ISC for further information.
        - Medical comorbidities manageable at lower level of care
    - Electrolyte disorder
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Electrolyte abnormality manageable at lower level of care
        - Sodium greater than 135 mEq/L (mmol/L) and less than 145 mEq/L (mmol/L) or at acceptable chronic level
        - Potassium greater than 3 mEq/L (mmol/L) and less than 5 mEq/L (mmol/L) or at acceptable chronic level
        - Calcium level greater than 8 mg/dL (2 mmol/L) and less than 12 mg/dL (3 mmol/L) or at acceptable chronic level
        - Appropriate oral intake
        - Appropriate urinary output
    - Fever
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Hypoxemia absent as indicated by absence of **ALL** of the following:
          - New SaO_2 less than 90% or PO_2 less than 60 mm Hg (8.0 kPa) on room air[N]
          - New oxygen requirement to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa)

- Chronic lung disease with new requirement for supplemental oxygen that is needed to keep SaO_2 at baseline or acceptable level, or is only performable in acute inpatient setting

Tachypnea absent as indicated by respiratory rate of **1 or more** of the following:
- Less than or equal to 18 breaths per minute in adult or child 12 years of age or older
- Less than or equal to 22 breaths per minute in child 6 to 11 years of age
- Less than or equal to 25 breaths per minute in child 3 to 5 years of age
- Less than or equal to 30 breaths per minute in child 1 or 2 years of age
- Less than or equal to 40 breaths per minute in infant 6 to 11 months of age
- Less than or equal to 45 breaths per minute in infant 3 to 5 months of age
- Less than or equal to 60 breaths per minute in infant 1 or 2 months of age

- Temperature status acceptable as indicated by **1 or more** of the following:
  - Temperature less than 100.5 degrees F (38.1 degrees C) (oral)
  - Temperature as expected for disease process and care performable at next level of care
- Cultures negative or infection identified and under adequate treatment
- No condition, organ dysfunction (eg, renal failure), or laboratory finding (eg, acidosis) identified that requires inpatient care
- Behavior or mental status abnormalities absent or manageable at lower level of care. See Mental Status Change: Common Complications and Conditions ISC for further information.
- Adequate diet tolerated
- Medical comorbidities absent or manageable at lower level of care

Gastrointestinal bleeding
- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Hemodynamic stability
  - Bleeding absent
  - Stable Hgb/Hct
  - Platelet count, prothrombin time, and partial thromboplastin time acceptable for next level of care
  - Surgical or other acute intervention not needed
  - Mental status at baseline
  - Pain absent or managed
  - Oral hydration and diet tolerated

Hyperglycemia and diabetes control
- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Hemodynamic stability
  - Glucose level acceptable and stable
  - Outpatient glucose management regimen arranged (ie, patient or caregiver has access to medication and supplies, understands treatment regimen, and is judged to be able to adhere to regimen)
  - Mental status at baseline
  - Dehydration absent
  - Nausea and vomiting absent or controlled
  - Oral intake adequate (ie, able to maintain oral hydration and tolerate a diet)
  - Electrolyte abnormalities absent or acceptable for outpatient treatment
  - Acidosis absent
  - Precipitating factors for glucose abnormality absent or identified and managed
  - Follow-up at next level of care planned

Mental status change
- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Underlying medical etiology of mental status change is absent, or has been established and adequately treated.
  - Danger to self or others is absent or manageable at lower level of care.
  - Behavior crisis management, including physical or chemical restraints, is not required or is available at lower level of care.
  - Substance or alcohol withdrawal is absent or manageable at lower level of care.
  - Behavioral symptoms (eg, agitation, somnolence, inappropriate behavior) are absent or manageable at lower level of care.

Psychiatric disorders
- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Danger to self or others is absent or manageable at lower level of care.
  - Behavior crisis management, including physical or chemical restraints, is not required or is available at lower level of care.
  - Behavioral symptoms (eg, agitation, somnolence, inappropriate behavior) are absent or manageable at lower level of care.
  - Patient and supports understand follow-up treatment and crisis plan.
  - Provider and supports are sufficiently available at lower level of care.
  - Patient can participate (eg, verify absence of plan for harm) in needed monitoring.

Respiratory insufficiency
- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Evaluation of cause of respiratory insufficiency complete
  - Suctioning, pulmonary toilet, or other therapy performable at lower level of care
  - Respiratory insufficiency has resolved or is manageable at lower level of care.
  - Anticoagulation treatment is not needed or can be performed at lower level of care.
  - Medical comorbidities manageable at lower level of care

Urinary complications
- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Renal function (creatinine) at baseline, or decrease in creatinine consistent with renal function return
  - Voiding adequately or with urinary catheter, percutaneous suprapubic tube, or plan for intermittent self-catheterization, and management regimen in place that is performable at lower level of care
  - Urine output adequate
  - Fever absent or reduced
  - Infection absent or treatable at next level of care

- Venous thrombosis and pulmonary embolism
  - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
    - Hemodynamic stability
    - Dyspnea absent
    - New oxygen requirement absent
    - Tachypnea absent
    - Dangerous arrhythmia absent
    - No bleeding or evidence of new emboli
    - Pain absent or managed
    - No evidence of cardiac dysfunction (eg, right ventricular heart failure)
    - Lower extremity examination at baseline, stable, or improved
    - Anticoagulation tolerated (eg, no allergic reaction)
    - Outpatient anticoagulation plan established
    - No requirement for hospital level of care for primary condition or comorbidities
- Wound and skin care
  - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
    - Hemodynamic stability
    - Volume status acceptable (eg, not dehydrated)
    - Mental status at baseline
    - Hypoxemia absent
    - Tachypnea absent
    - Fistulas, tunneling, or underlying deep tissue infection absent or treated
    - Ulcer surgical repair not needed or healing without complications
    - Afebrile or fever improved and appropriate for next level of care
    - Infection resolved or treatment instituted (eg, antibiotics) and performable at next level of care
    - Pain absent or managed
    - Wound closed, continuity adequately restored, or wound manageable at lower level of care
    - No drain needed or drain care manageable at lower level of care
    - Wound hematoma or seroma resolving
    - Dressing care manageable at lower level of care
    - Coagulopathy absent, resolved, or treatable at lower level of care
    - Medical comorbidities resolved or treatable at lower level of care

See Common Complications and Conditions ISC for further information.

See Gastric Restrictive Procedure with Gastric Bypass by Laparoscopy ISC Optimal Recovery Guideline for further supporting sections.

Discharge Destination

- Post-hospital levels of admission may include:
  - Home.
  - Home healthcare. See Home Care Indications for Admission Section HC in Gastric Obesity Surgery guideline in Home Care.
  - Recovery facility care. See Recovery Facility Care Indications for Admission Section RFC in Gastric Obesity Surgery guideline in Recovery Facility Care.

Footnotes

[A] Overweight is defined as a BMI of 25.0 to 29.9, and obesity as a BMI of 30.0 or greater. [A in Context Link 1, 2, 3]

[B] An evidenced-based multispecialty-developed consensus guideline concludes that bariatric surgery is not appropriate for adolescents with type 2 diabetes. [B in Context Link 1]

[C] A multispecialty-developed consensus statement, based upon a systematic review of the published medical literature, concludes that for adult patients with type 2 diabetes (controlled or not) and a BMI of 40 or greater, and for adult patients with inadequately controlled type 2 diabetes whose BMI is 35 to 39.9, bariatric surgery should be recommended to improve glucose control. This same statement concludes that bariatric surgery be considered in adult patients with inadequately controlled type 2 diabetes and a BMI between 30 and 34.9. This evidence review concludes that Roux-en-Y bypass has the most favorable risk/benefit profile for type 2 diabetics, that vertical sleeve gastrectomy is effective, and that gastric banding is only effective to the degree to which it causes weight loss; the review also concluded that gastric banding has a higher risk for failure or need for revision. Although effective, due to higher risk of nutritional deficiencies, it is recommended that biliopancreatic diversion (with or without duodenal switch) be considered only in diabetic patients with a BMI of 60 or greater. It is further recommended that BMI thresholds be reduced by 2.5 in patients of Asian descent. [C in Context Link 1]

[D] A precise definition of adequate glucose control in type 2 diabetes varies to some degree depending on the patient. Nonpregnant adults may have a target hemoglobin A1c less than 7%, while those who are elderly, have a history of severe hypoglycemia, whose life expectancy is limited, who have advanced microvascular or macrovascular complications, or who have serious comorbid illness may have a target of less than 8%. [D in Context Link 1]

[E] Full growth or nearly (95%) full growth is recommended for adolescents before they undergo a bariatric procedure. [E in Context Link 1]

[F] The mean arterial pressure equals diastolic pressure plus ((systolic pressure minus diastolic pressure)/3). [F in Context Link 1, 2]

[G] For the purposes of the Inpatient & Surgical Care guidelines, telemetry is defined as inpatient cardiorespiratory monitoring not performed in an intensive or an intermediate care unit. Cardiorespiratory monitoring may be indicated in the acute stage of a wide variety of conditions and for many severe illnesses that also require intermediate or intensive care treatment. The Telemetry Guidelines list includes only conditions being treated outside an intensive care or intermediate care environment that may require telemetry monitoring. This also assumes that the patient meets clinical indications for admission or

continued hospital stay. The presence of a diagnosis on the Telemetry Guidelines list does not necessarily connote a need for inpatient care and monitoring. [G in Context Link 1]

[H] Telemetry monitoring is generally continued until treatment achieves adequate control or arrhythmia is diagnosed to be a stable type not requiring acute intervention. [H in Context Link 1]

[I] Appropriate defibrillator detection and firing requires inpatient monitoring during evaluation of the arrhythmia. Inappropriate firing will require external monitoring until the device is interrogated. [I in Context Link 1]

[J] The initiation of certain antiarrhythmic medications (eg, dofetilide, sotalol, procainamide) may require continuous ECG monitoring for up to 3 days of therapy because of proarrhythmic effects. [J in Context Link 1]

[K] Routine uncomplicated cardiac procedures, such as uncomplicated coronary angiography, do not require cardiac monitoring. [K in Context Link 1]

[L] Dedicated intermediate-level stroke care units are recommended over a telemetry unit for acute ischemic stroke, if available. Cardiac monitoring may be indicated if cardioembolic source (eg, atrial fibrillation) is suspected. [L in Context Link 1]

[M] Cardiac monitoring may be discontinued once the electrolyte abnormality has been corrected. [M in Context Link 1]

[N] Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude. [N in Context Link 1]

Definitions

Altered mental status

- Altered mental status indicated by **1 or more** of the following(1)(2)(3)(4):
  - Confusional state (eg, disorientation, difficulty following commands, deficit in attention)
  - Lethargy (awake or arousable, but with drowsiness; reduced awareness of self and environment)
  - Obtundation (ie, arousable only with strong stimuli, lessened interest in environment, slowed responses to stimulation)
  - Stupor (may be arousable but patient does not return to normal baseline level of awareness)
  - Coma (not arousable)

References

1. Huff JS. Confusion. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:132-7.
2. Lei C, Smith C. Depressed consciousness and coma. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:123-31.
3. Abraham G, Zun LS. Delirium and dementia. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1278-88.
4. MacNeill EC, Vashist S. Approach to syncope and altered mental status. Pediatric Clinics of North America 2013;60(5):1083-106. DOI: 10.1016/j.pcl.2013.06.013.

Altered mental status that is severe or persistent

- Altered mental status that is severe or persistent as indicated by **1 or more** of the following(1)(2)(3)(4):
  - Confusional state (eg, disorientation, difficulty following commands, deficit in attention) that persists (eg, for more than few hours) despite appropriate treatment (eg, of underlying cause)
  - Lethargy (awake or arousable, but with drowsiness; reduced awareness of self and environment) that persists (eg, for more than few hours) despite appropriate treatment (eg, of underlying cause)
  - Obtundation (ie, arousable only with strong stimuli, lessened interest in environment, slowed responses to stimulation)
  - Stupor (may be arousable but patient does not return to normal baseline level of awareness)
  - Coma (not arousable)

References

1. Huff JS. Confusion. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:132-7.
2. Lei C, Smith C. Depressed consciousness and coma. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:123-31.
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4. MacNeill EC, Vashist S. Approach to syncope and altered mental status. Pediatric Clinics of North America 2013;60(5):1083-106. DOI: 10.1016/j.pcl.2013.06.013.

Bradycardia

- Bradycardia as indicated by **1 or more** of the following(1)(2):
  - Heart rate less than 60 beats per minute in adult or child 6 years or older
  - Heart rate less than 70 beats per minute in child 3 to 5 years of age
  - Heart rate less than 80 beats per minute in child 1 to 2 years of age
  - Heart rate less than 90 beats per minute in infant 6 to 11 months of age
  - Heart rate less than 100 beats per minute in infant 3 to 5 months of age

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1. Yealy DM, Kosowsky JM. Dysrhythmias. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:929-58.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Cardiac arrhythmias of immediate concern

- Cardiac arrhythmias or findings of immediate concern as indicated by **1 or more** of the following(1)(2):
  - Heart rhythms that are inherently dangerous or unstable as indicated by **1 or more** of the following(3)(4)(5):
    - Resuscitated ventricular fibrillation or cardiac arrest
    - Ventricular escape rhythm
    - Sustained ventricular tachycardia (30 seconds or more of ventricular rhythm at greater than 100 beats per minute)
    - Nonsustained ventricular tachycardia and **1 or more** of the following:
      - Suspected cardiac ischemia as cause or consequence of ventricular tachycardia
      - Acute myocarditis
  - Unstable cardiac conduction defects as indicated by **1 or more** of the following(5)(6)(7):
    - Type II second-degree atrioventricular block
    - Third-degree atrioventricular block
    - New-onset left bundle branch block with suspected myocardial ischemia
  - Any heart rhythm and **1 or more** of the following(3)(4)(8)(9)(10):
    - Continuous long-term ECG monitoring needed (eg, initiation of drug requiring monitoring for more than 24 hours)
    - Patient has automatic implanted cardioverter-defibrillator that is repeatedly firing, malfunctioning, or in need of immediate adjustment of settings beyond scope of ambulatory or observation care.
  - Heart rhythms of concern due to **1 or more** of the following:
    - Hypotension
    - Respiratory distress
    - Association with other significant symptoms (eg, Bradycardia with syncope or ongoing dizziness, supraventricular tachycardia with chest pain)(8)(9)(11)

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4. Al-Khatib SM, et al. 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation 2017;Online. DOI: 10.1161/CIR.0000000000000549. (Reaffirmed 2017 Nov)
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10. Hoskins MH, De Lurgio DB. Pacemakers, defibrillators, and cardiac resynchronization devices in hospital medicine. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1025-34.
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Dangerous arrhythmia

- Dangerous arrhythmia as indicated by **1 or more** of the following(1)(2):
  - Heart rhythms that are inherently dangerous or unstable as indicated by **1 or more** of the following(3)(4)(5):
    - Resuscitated ventricular fibrillation or cardiac arrest
    - Ventricular escape rhythm
    - Sustained (30 seconds or more of ventricular rhythm at greater than 100 beats per minute) ventricular tachycardia
    - Nonsustained ventricular tachycardia and **1 or more** of the following:
      - Acute myocarditis
      - Myocardial ischemia
  - Unstable cardiac conduction defects as indicated by **1 or more** of the following(5)(6)(7):
    - Type II second-degree atrioventricular block
    - Third-degree atrioventricular block
    - New-onset left bundle branch block with suspected myocardial ischemia
  - Heart rhythms of concern due to **1 or more** of the following:
    - Hypotension
    - Respiratory distress
    - Association with other significant symptoms; examples include(8)(9)(10):
      - Bradycardia with dizziness or syncope
      - Supraventricular tachycardia with chest pain

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1. Olgin JE, Zipes DP. Specific arrhythmias: diagnosis and treatment. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:748-97.
2. Van Hare GF. Disturbances of rate and rhythm of the heart. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:2250-61.
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Dangerous arrhythmia absent

- Dangerous arrhythmia absent as indicated by absence of **ALL** of the following(1)(2)(3)(4)(5)(6)(7)(8)(9)(10):
  - Resuscitated ventricular fibrillation or cardiac arrest
  - Ventricular escape rhythm
  - Sustained (30 seconds or more of ventricular rhythm at greater than 100 beats per minute) ventricular tachycardia
  - Nonsustained ventricular tachycardia with myocarditis or ischemia
  - Type II second-degree atrioventricular block
  - Third-degree atrioventricular block
  - New-onset left bundle branch block with suspected myocardial ischemia
  - Heart rhythms of concern due to association with Hypotension, Respiratory distress, or other significant symptoms such as Bradycardia with syncope or Tachycardia with chest pain

References

1. Olgin JE, Zipes DP. Specific arrhythmias: diagnosis and treatment. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:748-97.
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Hemodynamic instability

- Hemodynamic instability as indicated by **1 or more** of the following(1)(2)(3)(4)(5)(6)(7):
  - Vital sign abnormality not readily corrected by appropriate treatment within 12 to 24 hours as indicated by **1 or more** of the following:
    - Tachycardia that persists despite appropriate treatment (eg, volume repletion, treatment of pain, treatment of underlying cause)
    - Hypotension that persists despite appropriate treatment (eg, volume repletion, treatment of underlying cause)
    - Orthostatic vital sign changes that persist despite appropriate treatment (eg, volume repletion)
  - Vital sign abnormality that is severe as indicated by **1 or more** of the following:
    - Inadequate perfusion as indicated by **1 or more** of the following:
      - Lactate of 2.5 mmol/L (22.5 mg/dL) or more[A](8)(9)
      - Metabolic acidosis (arterial pH less than 7.35) not otherwise explained
      - New abnormal capillary refill (greater than 3 seconds)
      - Reduced urine output

- Altered mental status
- Myocardial ischemia
- Mean arterial pressure[B] less than 60 mm Hg
- IV inotropic or vasopressor medication required to maintain adequate blood pressure or perfusion

References

1. Puskarich MA, Jones AE. Shock. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:68-76.
2. Lewis J, Patel B. Shock. In: Gershel JC, Rauch DA, editors. Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics. 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2018:69-78.
3. Hochman JS, Ingbar DH. Cardiogenic shock and pulmonary edema. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1759-64.
4. Munford RS. Severe sepsis and septic shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1751-9.
5. 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):801-10. DOI: 10.1001/jama.2016.0287.
6. Turner DA, Cheifetz IM. Shock. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:516-28.
7. Raees M. Cardiology. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:156-202.
8. Andersen LW, Mackenhauer J, Roberts JC, Berg KM, Cocchi MN, Donnino MW. Etiology and therapeutic approach to elevated lactate levels. Mayo Clinic Proceedings 2013;88(10):1127-40. DOI: 10.1016/j.mayocp.2013.06.012.
9. Kraut JA, Madias NE. Lactic acidosis. New England Journal of Medicine 2014;371(24):2309-19. DOI: 10.1056/NEJMra1309483.

Footnotes

A. There are numerous causes of an elevated lactate level. The most common are cardiogenic or hypovolemic shock, severe heart failure, severe trauma, or sepsis. However, there are also other etiologies to consider such as vigorous exercise, seizures, liver disease, or medication use (eg, metformin, beta2-agonists); therefore, interpretation of elevated lactate levels requires consideration of the clinical context (eg, well appearing post exercise vs hypotensive). The severity and persistence of the elevation can sometimes be helpful in this differentiation. In most instances of lactic acidosis, blood pH is less than 7.35, with a serum bicarbonate level 20 mEq/L (mmol/L) or lower. However, a coexisting respiratory or metabolic alkalosis can mask these findings.(8)(9)

B. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as mean arterial pressure (MAP) equals 1/3 SBP + 2/3 DBP.(1)(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)(3)(4)(5):
    - Tachycardia absent
    - Hypotension absent
    - No evidence of inadequate perfusion (eg, no myocardial ischemia)
    - No other hemodynamic abnormalities (eg, no Orthostatic vital sign changes)

References

1. Puskarich MA, Jones AE. Shock. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:68-76.
2. Lewis J, Patel B. Shock. In: Gershel JC, Rauch DA, editors. Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics. 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2018:69-78.
3. Hochman JS, Ingbar DH. Cardiogenic shock and pulmonary edema. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1759-64.
4. Munford RS. Severe sepsis and septic shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1751-9.
5. 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):801-10. DOI: 10.1001/jama.2016.0287.

Hypotension

- Hypotension as indicated by **ALL** of the following(1)(2)(3)(4):
  - Not patient baseline (eg, healthy adult with low SBP) or intentional therapeutic goal (eg, low SBP as treatment goal in heart failure)
  - Low blood pressure as indicated by **1 or more** of the following:
    - SBP less than 90 mm Hg in adult or child 10 years or older
    - Decrease in baseline SBP greater than 40 mm Hg in adult or child 10 years or older
    - Mean arterial pressure[A] less than 70 mm Hg in adult or child 10 years or older
    - Decrease in baseline mean arterial pressure[A] by 25% or more
    - SBP less than sum of 70 mm Hg plus twice patient's age in years in child 1 to 9 years of age
    - SBP less than 70 mm Hg in infant 1 to 11 months of age

References

1. Jones D, Di Francesco L. Hypotension. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:657-64.
2. Maier RV. Approach to the patient with shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1744-51.

3. Horeczko T, Inaba AS. Cardiac disorders. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:2099-125.
4. Huang MG, Santillanes G. General approach to the pediatric patient. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1985-93.

Footnotes

A. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as Mean Arterial Pressure (MAP) = 1/3 SBP + 2/3 DBP.

Hypotension absent

- Hypotension absent as indicated by **1 or more** of the following(1)(2)(3)(4):
  - SBP greater than or equal to 90 mm Hg and without recent decrease greater than 40 mm Hg from baseline in adult or child 10 years or older
  - Mean arterial pressure[A] greater than or equal to 70 mm Hg in adult or child 10 years or older
  - Mean arterial pressure[A] at patient's baseline (eg, healthy adult with low SBP), or at intentional therapeutic goal (eg, patient with heart failure)
  - SBP greater than or equal to sum of 70 mm Hg plus twice patient's age in years in child 1 to 9 years of age
  - SBP greater than or equal to 70 mm Hg in infant 1 to 11 months of age

References

1. Jones D, Di Francesco L. Hypotension. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:657-64.
2. Maier RV. Approach to the patient with shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1744-51.
3. Horeczko T, Inaba AS. Cardiac disorders. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:2099-125.
4. Huang MG, Santillanes G. General approach to the pediatric patient. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1985-93.

Footnotes

A. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as Mean Arterial Pressure (MAP) = 1/3 SBP + 2/3 DBP.

Hypothermia

- Hypothermia indicated by core (eg, rectal) body temperature less than or equal to 95 degrees F (35 degrees C)(1)

References

1. Zafren K, Danzl DF. Accidental hypothermia. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1743-54.

Hypoxemia

- Hypoxemia as indicated by **1 or more** of the following(1):
  - Previously normal respiratory status with **1 or more** of the following:
    - Arterial oxygen saturation (SaO_2) less than 90% or arterial partial pressure of oxygen (PO_2) less than 60 mm Hg (8.0 kPa) on room air[A]
    - Oxygen required to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa) (ie, saturation below 90% on room air)
  - Chronic lung disease with **1 or more** of the following(2):
    - New requirement for supplemental oxygen to keep SaO_2 at baseline or acceptable level
    - Required supplemental oxygen performable only in acute inpatient setting

References

1. Dezube R, Lechtzin N. Hypoxia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:669-75.
2. Staton GW, Ochoa CD. Chronic obstructive pulmonary disease. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1887-87.

Footnotes

A. Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude.(1)

Hypoxemia absent

- Hypoxemia absent as indicated by absence of **ALL** of the following(1):
  - New SaO_2 less than 90% or PO_2 less than 60 mm Hg (8.0 kPa) on room air[A]
  - New oxygen requirement to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa)
  - Chronic lung disease with new requirement for supplemental oxygen that is needed to keep SaO_2 at baseline or acceptable level, or is only performable in acute inpatient setting

References

1. Dezube R, Lechtzin N. Hypoxia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:669-75.

Footnotes

A. Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude.(1)

Orthostatic vital sign changes

- Orthostatic vital sign changes as indicated by **1 or more** of the following(1)(2):
  - 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):317-24. DOI: 10.1016/j.jash.2013.04.006. (Reaffirmed 2017 May)
2. Whelton PK, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Journal of the American College of Cardiology 2017;Online. DOI: 10.1016/j.jacc.2017.11.006.

Reduced urine output

- Reduced urine output as indicated by **1 or more** of the following(1)(2):
  - Urine output less than 0.5 mL/kg/hour for 6 hours in adult
  - Anuria (urine output less than 0.1 mL/kg/hour) for 4 hours in any age group
  - Reduced output in child as indicated by **1 or more** of the following(3):
    - Urine output less than 2 mL/kg/hour for 6 hours in infant younger than 2 years
    - Urine output less than 1 mL/kg/hour for 6 hours in child younger than 12 years
    - Urine output less than 0.75 mL/kg/hour for 6 hours in adolescent younger than 18 years

References

1. Acute kidney injury: prevention, detection and management of acute kidney injury up to the point of renal replacement therapy. NICE clinical guidance CG169 [Internet] National Institute for Health and Care Excellence. 2013 Aug (NICE reviewed 2017) Accessed at: http://www.nice.org.uk/guidance. [accessed 2017 Sep 19]
2. Kidney Disease: Improving Global Outcomes (KDIGO) Acute Kidney Injury Work Group. KDIGO clinical practice guideline for acute kidney injury. Kidney International. Supplement 2012;2(1):1-138. (Reaffirmed 2017 May)
3. Sreedharan R, Avner ED. Renal failure. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:2539-47.

Respiratory distress

- Respiratory distress as indicated by **ALL** of the following(1)(2):
  - Patient with **1 or more** of the following:
    - Dyspnea (difficulty breathing)
    - Tachypnea
    - Abnormal breathing pattern (eg, chest retractions)
    - Other evidence of difficulty breathing
  - Evidence of respiratory compromise as indicated by **1 or more** of the following:
    - Hypoxemia
    - Altered mental status
    - Other evidence of respiratory compromise (eg, pulmonary edema on chest x-ray)

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Naureckas ET, Solway J. Disturbances of respiratory function. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1663.

Tachycardia

- Tachycardia as indicated by **1 or more** of the following(1)(2):
  - Heart rate greater than 100 beats per minute in adult or child age 6 years or older
  - Heart rate greater than 115 beats per minute in child 3 to 5 years of age
  - Heart rate greater than 125 beats per minute in child 1 or 2 years of age
  - Heart rate greater than 130 beats per minute in infant 6 to 11 months of age
  - Heart rate greater than 150 beats per minute in infant 3 to 5 months of age
  - Heart rate greater than 160 beats per minute in infant 1 or 2 months of age

References

1. Southmayd GL. Tachycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:729-39.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachycardia absent

- Tachycardia absent as indicated by **1 or more** of the following(1)(2):
  - Heart rate less than or equal to 100 beats per minute in adult or child 6 years or older
  - Heart rate less than or equal to 115 beats per minute in child 3 to 5 years of age
  - Heart rate less than or equal to 125 beats per minute in child 1 or 2 years of age
  - Heart rate less than or equal to 130 beats per minute in infant 6 to 11 months of age
  - Heart rate less than or equal to 150 beats per minute in infant 3 to 5 months of age
  - Heart rate less than or equal to 160 beats per minute in infant 1 or 2 months of age

References

1. Southmayd GL. Tachycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:729-39.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachypnea

- Tachypnea as indicated by respiratory rate of **1 or more** of the following(1)(2):
  - Greater than 18 breaths per minute in adult or child age 12 years or older
  - Greater than 22 breaths per minute in child 6 to 11 years of age
  - Greater than 25 breaths per minute in child 3 to 5 years of age
  - Greater than 30 breaths per minute in child 1 or 2 years of age
  - Greater than 40 breaths per minute in infant 6 to 11 months of age
  - Greater than 45 breaths per minute in infant 3 to 5 months of age
  - Greater than 60 breaths per minute in infant 1 or 2 months of age

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachypnea absent

- Tachypnea absent as indicated by respiratory rate of **1 or more** of the following(1)(2):
  - Less than or equal to 18 breaths per minute in adult or child 12 years of age or older
  - Less than or equal to 22 breaths per minute in child 6 to 11 years of age
  - Less than or equal to 25 breaths per minute in child 3 to 5 years of age
  - Less than or equal to 30 breaths per minute in child 1 or 2 years of age
  - Less than or equal to 40 breaths per minute in infant 6 to 11 months of age
  - Less than or equal to 45 breaths per minute in infant 3 to 5 months of age
  - Less than or equal to 60 breaths per minute in infant 1 or 2 months of age

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Vital sign abnormality

- Vital sign abnormality as indicated by **ALL** of the following:
  - Vital sign findings not as expected for chronic patient condition or baseline (eg, intentionally low blood pressure in heart failure)
  - Vital sign abnormality as indicated by **1 or more** of the following:
    - Tachycardia
    - Hypotension
    - Orthostatic vital sign changes

Codes

ICD-10 Diagnosis: E66.01, E66.2

ICD-10 Procedure: 0D164ZA, 0D164ZB, 0DV64ZZ

CPT®: 43644, 43645

Last Update: 5/14/2018 10:19:31 PM
Build Number: 22.1.102576.004582

Gastric Restrictive Procedure with Gastric Bypass RRG

RRG: S-512-RRG (ISC)
Link to Codes

MCG Health
Inpatient & Surgical Care
22nd Edition

Clinical Indications for Procedure and Care

- Procedure indicated by **ALL** of the following:
  - Severity of obesity judged appropriate for procedure as indicated by **1 or more** of the following:
    - Patient has BMI[A] of 40 or greater. BMI Calculator
    - Patient has BMI[A] of 35 or greater and clinically serious condition related to obesity (eg, obesity hypoventilation, obstructive sleep apnea). BMI Calculator
    - Adult patient[B] has BMI[A] of 30 or greater with type 2 diabetes mellitus with inadequately controlled hyperglycemia (eg, hemoglobin A1c greater than 8% (64 mmol/mol) despite optimal medical treatment (eg, oral medication, insulin)).[C][D]
  - Patient is candidate for bariatric surgery as indicated by **ALL** of the following:
    - Failure to achieve and maintain significant weight loss with nonsurgical treatment
    - Correctable cause for obesity not identified (eg, endocrine disorder)
    - Patient has demonstrated reliable participation in preoperative weight-loss program that is multidisciplinary (eg, low-calorie diet, supervised exercise, behavior modification).
    - Current substance abuse not identified
    - Patient is fully grown or nearly fully grown.[E]
    - Expectation that patient will be able to adhere to postoperative care (eg, judged to be committed and able to participate in postoperative requirements)
    - Patient is receiving treatment in multidisciplinary program experienced in obesity surgery that can provide **ALL** of the following:
      - Surgeons experienced with procedure
      - Preoperative medical consultation and approval
      - Preoperative psychiatric consultation and approval
      - Nutritional counseling
      - Exercise counseling
      - Psychological counseling
      - Support group meetings

See Gastric Restrictive Procedure with Gastric Bypass ISC Optimal Recovery Guideline for further supporting sections.

Operative Status Assignment

Goal Length of Stay: 2 days postoperative

In some situations procedures that might otherwise be performed on an ambulatory basis may require inpatient care. In some cases this need can be identified preoperatively; in other cases this need is due to postoperative events or clinical findings (eg, failure to meet discharge readiness milestones).

See Discharge Readiness or Extended Stay section in this guideline, or Ambulatory Surgery Exception Criteria GRG, as appropriate.

- **Operative Status Criteria: Inpatient**

Level of Care Criteria

For patient conditions requiring more than routine inpatient care, documentation of need may be done using the [**Level of Care**] chart.

Intensive Care	Intermediate Care	Telemetry Care
• ICU admission may be indicated when need is demonstrated by **1 or more** of the following: − Vital sign abnormalities, including **1 or more** of the following:	• Intermediate care admission may be indicated after intensive care treatment (eg, as "step-down" care), or to provide higher level of care than	• Telemetry admission[G] may be indicated for **1 or more** of the following:

- Systolic arterial pressure less than 90 mm Hg, or 20 mm Hg below patient's usual pressure in adult or child 10 years or older
- Systolic arterial blood pressure less than 70 mm Hg in infant (1 month to 1 year of age), or less than the sum of 70 mm Hg plus twice the patient's age in child 2 to 10 years of age
- Diastolic arterial pressure greater than 120 mm Hg
- Mean arterial pressure less than 70 mm Hg in adult[F]
- Mean arterial pressure less than the sum of 40 mm Hg plus 1.5 times patient's age in child or adolescent[F]
- Pulse less than 40 or greater than 140 beats per minute in adult or in adolescent 16 years or older
- Pulse less than 90 or greater than 160 beats per minute in infant younger than 2 years
- Pulse less than 70 or greater than 150 beats per minute in child 2 to 7 years of age
- Respiratory rate greater than 35 or less than 8 breaths per minute in adult

− Laboratory findings (new), including **1 or more** of the following:

- Saturation of arterial oxygen less than 90% or partial pressure of oxygen less than 60 mm Hg (8.0 kPa) despite oxygen supplementation
- Rising partial pressure of carbon dioxide with acute or uncompensated respiratory acidosis
- Arterial pH less than 7.2 or greater than 7.65
- Serum sodium less than 110 mEq/L (mmol/L) or greater than 160 mEq/L (mmol/L)
- Serum sodium less than 125 mEq/L (mmol/L) with Altered mental status, seizure, or respiratory arrest
- Serum sodium more than 145 mEq/L (mmol/L) with Altered mental status, seizure, or severe dehydration requiring large-volume fluid resuscitation
- Serum potassium less than 2 mEq/L (mmol/L) or greater than 7 mEq/L (mmol/L)
- Serum potassium less than 2.5 mEq/L (mmol/L) with severe clinical or electrocardiogram manifestations (eg, paralysis, cardiac arrhythmia, delayed depolarization, flat T waves, or U waves)
- Serum potassium greater than 6 mEq/L (mmol/L) with electrocardiogram changes of hyperkalemia (eg, peaked T waves, widened QRS, cardiac arrhythmia)
- Serum calcium greater than 14 mg/dL (3.5 mmol/L)
- Serum calcium greater than 12 mg/dL (3.0 mmol/L) with Altered mental status, severe volume depletion requiring large-volume IV fluid resuscitation, Hypotension, significant arrhythmia, heart block, or digitalis toxicity
- Serum phosphorus less than 1 mg/dL (0.32 mmol/L)
- Toxic drug level or poisoning causing or likely to cause neurologic abnormalities or Hemodynamic instability

general hospital ward (eg, as "step-up" care in absence of intensive care admission needs) (see Intensive Care Guidelines ISC), as indicated by **1 or more** of the following:

− Intermediate level monitoring or care needed as indicated by **1 or more** of the following:

- Care requiring nurse-to-patient ratio of 1 to 2 or 1 to 3; examples include:
  - Complex wound management
  - Profound neuromuscular weakness
  - Postoperative high-risk patient with Hemodynamic stability
- Frequent (but less frequent than hourly) monitoring, such as vital signs or neurologic checks
- Stable chronic mechanical ventilator or long-term weaning needs
- Noninvasive ventilation
- Peritoneal dialysis
- Frequent pulmonary therapy with endotracheal suctioning (nonintubated or chronic tracheostomy patient)
- Rapid diuresis for fluid overload
- Electrolyte, metabolic, or other problem requiring frequent laboratory testing or treatment adjustments
- Monitoring of continuous high-level epidural anesthesia
- Titration of IV vasodilator or antiarrhythmic agents
- Continuous pulse oximetry monitoring
- Patient who requires short-term inpatient monitoring (eg, cardiac, wound site, perfusion) after procedure as indicated by **1 or more** of the following:
  - Angioplasty
  - Pacemaker placement with cardiac conduction defect
  - Electrophysiologic studies with such procedures as ablation
  - Implantable cardiac defibrillator placement

− **General Surgery** diagnoses or procedures, including patient with postoperative Hemodynamic stability requiring **1 or more** of the following:

- Close monitoring for first postoperative day (eg, due

− Cardiac disease, including **1 or more** of the following:

- Post-acute MI
- Low-risk patient with ST-segment elevation MI who has undergone successful percutaneous coronary intervention
- Unstable angina
- Suspected MI (until it is ruled out)
- Post cardiac surgery (first 48 to 72 hours unless complications occur)
- Dangerous arrhythmia [H] diagnosed or suspected
- Firing of implantable cardioverter-defibrillator[I]
- Suspected pacemaker or implantable cardioverter-defibrillator malfunction
- New administration or adjustment of antiarrhythmic drug[J]
- Acute myocarditis or pericarditis
- Child admitted for acute congestive heart failure
- High-risk ECG findings (eg, bifascicular block, bradycardia, abnormal QT interval, ventricular pre-excitation, other conduction abnormality)
- New pathologic changes on ECG (eg, new Q waves)
- Short-term monitoring after cardiac procedure as indicated by **1 or more** of the following[K]:
  - Electrophysiologic studies
  - Implantable cardioverter-defibrillator placement
  - Percutaneous coronary intervention with stent placement
  - Pacemaker placement with cardiac conduction defect
  - Arrhythmia ablation

− Drug overdose or poisoning with substance that causes Bradycardia, arrhythmia, or QT prolongation (eg, beta-blockers, phenothiazines, sympathomimetic agents, cyclic antidepressants, digitalis, antiarrhythmic drugs)

- Short-term cardiac monitoring after therapeutic or diagnostic procedure requiring conscious sedation or anesthesia (eg, endoscopy, percutaneous vascular procedures)
- Acute cerebrovascular event[L]
- Patients who have received massive blood transfusion (eg, 10 units of packed red blood

- Less severe laboratory abnormalities contributing to **1 or more** of the following:
  - Seizure
  - Altered mental status
  - Muscle weakness or severe spasms
  - Arrhythmias
  - Hemodynamic instability
  - Other significant clinical manifestations

− Electrocardiogram (or cardiac monitoring) findings, including **1 or more** of the following:
- Inherently unstable or life-threatening arrhythmia (eg, sustained ventricular tachycardia, ventricular fibrillation, asystole)
- Arrhythmia causing Hypotension (eg, Bradycardia, Tachycardia)
- Complete heart block causing Hypotension
- Other findings indicative of need for intensive care (eg, acute cardiac ischemia, myocardial infarction)

− Physical findings, including **1 or more** of the following:
- Threatened airway
- Altered mental status that is severe or persistent
- Repeated or prolonged seizures
- New-onset anuria (urine output less than 0.1 mL/kg/hour over 4 hours)
- Cyanosis (new)
- Cardiac tamponade
- Status post respiratory or cardiac arrest
- Severe burns (eg, partial thickness burns over more than 10% of body surface, third-degree burns)
- Findings consistent with abdominal emergency (eg, peritoneal signs)

− Imaging findings, such as dissecting aneurysm or ruptured viscus

− Specific intervention or monitoring needed, as indicated by **1 or more** of the following:
- New need for assisted ventilation, invasive or noninvasive
- New need for intubation (eg, to protect airway)
- New tracheostomy (less than 48 hours old)
- Hourly vital signs or neurologic checks
- Pulmonary artery line monitoring needed
- Continuous arterial line monitoring needed
- Continuous IV vasoactive drugs
- Continuous IV antiarrhythmics
- Large volume IV fluid resuscitation (eg, greater than 6 L per day)
- Large or rapid transfusion needs (eg, more than 6 units within 24 hours)
- High-risk IV treatment, such as thrombolysis, hypertonic saline, or mannitol infusion
- Rapid desensitization for high-risk hypersensitivity reaction to required medication (eg, penicillin, monoclonal antibody)
- Acute cardiac pacing
- Intra-aortic balloon pump
- Ventricular assist device
- Extracorporeal membrane oxygenation device
- Pericardiocentesis
- Hemodialysis in unstable patient

to risk of procedure, underlying comorbidity, need for frequent blood testing, or surgical or anesthetic complication)
- Fluid resuscitation because of major fluid shifts
- Extensive wound management
- Complex multiple injury care

cells in 24 hours) with Hemodynamic stability, no active bleeding, and low risk for rebleed.
- Short-term cardiac monitoring during and after treatment with medications that increase risk of arrhythmia or bradycardia (eg, lidocaine infusion for pain, neostigmine infusion for treatment of acute colonic pseudo-obstruction, phenytoin infusion for seizure without status epilepticus)

− Uncorrected electrolyte abnormalities associated with increased risk of dangerous arrhythmia[M]; indicated by **1 or more** of the following:
- Hyperkalemia with attributable ECG changes
- Potassium greater than 6.5 mEq/L (mmol/L) in patient without history of chronic renal disease
- Prolonged QT attributed to hypokalemia, hypomagnesemia, or hypocalcemia
- Other clinically significant electrolyte abnormality associated with increased risk of arrhythmia

− Unexplained syncope or other neurologic event suspected of being due to arrhythmia due to finding that increases risk; as indicated by **1 or more** of the following:
- Vital sign abnormality
- Tachypnea
- Altered mental status
- History of heart failure
- History of coronary artery disease
- History of structural heart disease (eg, hypertrophic cardiomyopathy, severe valvular disease, congenital heart disease, rheumatic heart disease)
- Patient reported palpitations or tachycardia preceding syncope.
- Syncope occurring during exercise
- Syncope sudden and without prodrome
- Syncope while supine
- Dangerous arrhythmia suspected as cause as indicated by **1 or more** of the following:
  - History of Dangerous arrhythmia
  - History of previous syncope due to arrhythmia
  - Use of medication known to cause Dangerous arrhythmia
  - Family history of sudden death

- Continuous renal replacement therapy (eg, continuous venovenous hemodialysis)
- Continuous fluid removal via hemofiltration (eg, continuous venovenous hemofiltration)
- Peritoneal dialysis initiation
- Emergency bronchoscopic therapy (eg, for hemoptysis)
- Emergency endoscopic therapy for bleeding
- Balloon tamponade for variceal bleeding
- Intracranial pressure monitoring or tissue oxygen monitoring
- Ventriculostomy monitoring
- Treatment of ongoing seizures
- Induced hypothermia or coma
- Ongoing frequent testing and treatment for acute conditions, including **1 or more** of the following:
  - Correction of severe metabolic acidosis or alkalosis
  - Frequent glucose checks (ie, more frequent than performable at lower level of care)
  - Severe fluid overload
  - Cerebral edema
  - Monitoring or suctioning for respiratory insufficiency or acidosis
  - Monitoring for active bleeding
- Other need for treatment or monitoring not available outside the ICU

− **Systemic conditions**, including **1 or more** of the following:

- Severe electrolyte or metabolic disturbance causing or likely to cause **1 or more** of the following:
  - Life-threatening cardiac dysrhythmia
  - Respiratory insufficiency
  - Altered mental status
  - Seizures
  - Hemodynamic instability
  - Muscular weakness
- Environmental injuries such as Hypothermia, hyperthermia, electrical injuries, or near drowning
- Anaphylaxis with respiratory compromise, Hypotension, or other end organ dysfunction
- Confirmed or suspected malignant hyperthermia as evidenced by exposure to volatile anesthetic agent or succinylcholine and **1 or more** of the following:
  - Hypermetabolism as evidenced by inappropriately increased CO_2 production, O_2 consumption, or acute mixed metabolic and respiratory acidosis
  - Unexplained Tachycardia
  - Cardiac tachyarrhythmias, ectopic ventricular beats or ventricular bigeminy
  - Masseter spasm
  - Muscle rigidity
  - Rapid increase in core body temperature
  - Acute rise in serum potassium, creatine kinase, or myoglobin
- Neuroleptic malignant syndrome as evidenced by exposure to neuroleptic
  - Presentation consistent with acute coronary syndrome (eg, suspicious chest pain)
  - Multiple syncopal episodes within last 6 months
  - Known channelopathy (eg, long QT syndrome, Brugada syndrome, or catecholaminergic paroxysmal ventricular tachycardia)
- Abnormal ECG as indicated by **1 or more** of the following:
  - High-risk ECG findings (eg, bifascicular block, bradycardia, abnormal QT interval, ventricular pre-excitation, other conduction abnormality)
  - New pathologic changes on ECG (eg, new Q waves)
  - Cardiac rhythm other than normal sinus

drug (eg, phenothiazine, butyrophenone) or dopamine-depleting drug (eg, alpha-methyltyrosine), or withdrawal of dopaminergic agent (eg, L-dopa, amantadine) and **1 or more** of the following:
    - Muscle rigidity
    - Hyperthermia
    - Altered mental status
    - Hemodynamic instability
    - Acute rise in creatine kinase
- Serotonin syndrome (serotonin toxicity) as evidenced by exposure to medication(s) that increases level of serotonin in CNS (eg, some antidepressants including serotonin reuptake inhibitors, monoamine oxidase inhibitors, opioids, stimulants, triptans, anticonvulsant agents, linezolid) and **1 or more** of the following:
    - Significant neurologic finding (eg, agitation, hypomania, hallucinations, Altered mental status)
    - Significant autonomic nervous system-related finding (eg, sweating, hyperthermia, tachycardia, vomiting)
    - Significant musculoskeletal findings (eg, myoclonus, hyperreflexia, tremor, rhabdomyolysis, elevated creatinine kinase)
- Severe alcohol withdrawal with **1 or more** of the following:
    - Hemodynamic instability
    - Cardiac arrhythmias of immediate concern
    - Uncontrolled seizures
    - Respiratory depression with need for, or high likelihood of requiring, mechanical ventilation
    - Need for anesthetic agent to control agitation (eg, dexmedetomidine, propofol, ketamine)
    - Delirium tremens as evidenced by **ALL** of the following:
        - Cessation of, or reduction in, heavy and prolonged alcohol use
        - Delirium (eg, fluctuating disturbance in attention, awareness, orientation, language)
        - Signs or symptoms of alcohol withdrawal as indicated by **2 or more** of the following:
            - Autonomic hyperactivity (diaphoresis, tachycardia, hypertension)
            - Tremor
            - Nausea or vomiting
            - Hallucinations
            - Increased anxiety

- Psychomotor agitation
- Generalized tonic-clonic seizures

− **General Surgery** diagnoses or procedures, including **1 or more** of the following:

- Acute abdominal catastrophe (eg, ischemic bowel, perforated viscus, abdominal compartment syndrome)
- Complications of any surgery requiring ICU intervention as indicated by **1 or more** of the following:
  - Hemodynamic instability
  - MI with complications (eg, severe arrhythmia, Hypotension)
  - Excessive bleeding or severe coagulopathy
  - Respiratory failure or insufficiency
  - Renal failure
  - Airway instability or obstruction
  - Neurologic deterioration
  - Infection with Hypotension or significant fluid shifts
- Multiple trauma with complicating features as indicated by **1 or more** of the following:
  - Serious injury involving more than one organ or system
  - Single organ injury requiring critical care intervention or monitoring (eg, invasive hemodynamic monitoring, frequent vital signs or neurologic checks)
  - Impending acute respiratory failure due to lung contusion, unstable chest wall, aspiration, hemorrhage, tension or open pneumothorax, or fat embolism
  - Facial or neck injury threatening airway patency
  - Cardiac contusion
  - Pericardial effusion
  - Bronchial tear
  - Hemodynamic instability
  - Rhabdomyolysis requiring large-volume IV fluid resuscitation
  - Other significant complicating feature
- Organ transplant
- Esophagectomy
- Pancreatectomy (eg, Whipple procedure)
- Necrotizing soft tissue infection (eg, necrotizing fasciitis, Fournier gangrene)
- Preoperative or postoperative patient requiring ICU intervention, such as hemodynamic optimization, pulmonary artery monitoring, mechanical ventilation, or extensive nursing care
- Obesity surgery patient with **1 or more** of the following:
  - ICU management needs for comorbid conditions (eg, airway issues due to severe sleep apnea)
  - Failed postoperative extubation
  - Intraoperative complications (eg, perforated viscus, bleeding)

Hospitalization

Goal Length of Stay: 2 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.

Discharge Readiness

- Discharge readiness is indicated by patient meeting Recovery Milestones, including **ALL** of the following:
  - **Hemodynamic stability**
  - **No evidence of ileus or bowel obstruction**
  - **No evidence of postoperative or surgical site infection**
  - **Pain absent or managed**
  - **Ambulatory**
  - **Oral hydration, medications, and diet**
  - **Discharge plans and education understood**

See Gastric Restrictive Procedure with Gastric Bypass Optimal Recovery Course ISC for full optimal recovery management information.

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:
  - Complications of procedure
    - Complications include anastomotic leaks causing peritonitis, thromboembolic disease, wound infection, suture line bleeding, pneumonia, respiratory failure, evisceration, or splenic injury.
    - Expect brief to moderate stay extension.
  - Care for comorbidities
    - Patient with complex comorbidities, such as chronic obstructive pulmonary disease, renal disease, or heart failure, may require continued inpatient care.
    - Expect brief stay extension.
  - Clear liquid diet not tolerated
    - Expect brief stay extension.
  - Other complication or condition, including:
    - Anemia
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Active blood loss absent
        - Signs and symptoms of anemia absent or improved
        - Mental status normal or at baseline
        - Hgb/Hct level stable and acceptable for next level of care
        - Etiology of anemia requiring inpatient care absent
    - Arrhythmia
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Arrhythmia evaluation completed
        - Reversible causes of arrhythmia eliminated or mitigated
        - Specific antiarrhythmia treatment initiated as appropriate
        - Anticoagulation requirements addressed (or anticoagulation not required). See Anticoagulation Requirement: Common Complications and Conditions ISC for further information.
        - Medical comorbidities manageable at lower level of care
    - Electrolyte disorder
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Electrolyte abnormality manageable at lower level of care
        - Sodium greater than 135 mEq/L (mmol/L) and less than 145 mEq/L (mmol/L) or at acceptable chronic level
        - Potassium greater than 3 mEq/L (mmol/L) and less than 5 mEq/L (mmol/L) or at acceptable chronic level
        - Calcium level greater than 8 mg/dL (2 mmol/L) and less than 12 mg/dL (3 mmol/L) or at acceptable chronic level
        - Appropriate oral intake
        - Appropriate urinary output
    - Fever
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Hypoxemia absent as indicated by absence of **ALL** of the following:
          - New SaO_2 less than 90% or PO_2 less than 60 mm Hg (8.0 kPa) on room air[N]
          - New oxygen requirement to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa)
          - Chronic lung disease with new requirement for supplemental oxygen that is needed to keep SaO_2 at baseline or acceptable level, or is only performable in acute inpatient setting
        - Tachypnea absent as indicated by respiratory rate of **1 or more** of the following:
          - Less than or equal to 18 breaths per minute in adult or child 12 years of age or older

        - Less than or equal to 22 breaths per minute in child 6 to 11 years of age
        - Less than or equal to 25 breaths per minute in child 3 to 5 years of age
        - Less than or equal to 30 breaths per minute in child 1 or 2 years of age
        - Less than or equal to 40 breaths per minute in infant 6 to 11 months of age
        - Less than or equal to 45 breaths per minute in infant 3 to 5 months of age
        - Less than or equal to 60 breaths per minute in infant 1 or 2 months of age
    - Temperature status acceptable as indicated by **1 or more** of the following:
        - Temperature less than 100.5 degrees F (38.1 degrees C) (oral)
        - Temperature as expected for disease process and care performable at next level of care
    - Cultures negative or infection identified and under adequate treatment
    - No condition, organ dysfunction (eg, renal failure), or laboratory finding (eg, acidosis) identified that requires inpatient care
    - Behavior or mental status abnormalities absent or manageable at lower level of care. See Mental Status Change: Common Complications and Conditions ISC for further information.
    - Adequate diet tolerated
    - Medical comorbidities absent or manageable at lower level of care

- Gastrointestinal bleeding
    - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Bleeding absent
        - Stable Hgb/Hct
        - Platelet count, prothrombin time, and partial thromboplastin time acceptable for next level of care
        - Surgical or other acute intervention not needed
        - Mental status at baseline
        - Pain absent or managed
        - Oral hydration and diet tolerated
- Hyperglycemia and diabetes control
    - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Glucose level acceptable and stable
        - Outpatient glucose management regimen arranged (ie, patient or caregiver has access to medication and supplies, understands treatment regimen, and is judged to be able to adhere to regimen)
        - Mental status at baseline
        - Dehydration absent
        - Nausea and vomiting absent or controlled
        - Oral intake adequate (ie, able to maintain oral hydration and tolerate a diet)
        - Electrolyte abnormalities absent or acceptable for outpatient treatment
        - Acidosis absent
        - Precipitating factors for glucose abnormality absent or identified and managed
        - Follow-up at next level of care planned
- Mental status change
    - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Underlying medical etiology of mental status change is absent, or has been established and adequately treated.
        - Danger to self or others is absent or manageable at lower level of care.
        - Behavior crisis management, including physical or chemical restraints, is not required or is available at lower level of care.
        - Substance or alcohol withdrawal is absent or manageable at lower level of care.
        - Behavioral symptoms (eg, agitation, somnolence, inappropriate behavior) are absent or manageable at lower level of care.
- Psychiatric disorders
    - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Danger to self or others is absent or manageable at lower level of care.
        - Behavior crisis management, including physical or chemical restraints, is not required or is available at lower level of care.
        - Behavioral symptoms (eg, agitation, somnolence, inappropriate behavior) are absent or manageable at lower level of care.
        - Patient and supports understand follow-up treatment and crisis plan.
        - Provider and supports are sufficiently available at lower level of care.
        - Patient can participate (eg, verify absence of plan for harm) in needed monitoring.
- Respiratory insufficiency
    - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Evaluation of cause of respiratory insufficiency complete
        - Suctioning, pulmonary toilet, or other therapy performable at lower level of care
        - Respiratory insufficiency has resolved or is manageable at lower level of care.
        - Anticoagulation treatment is not needed or can be performed at lower level of care.
        - Medical comorbidities manageable at lower level of care
- Urinary complications
    - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Renal function (creatinine) at baseline, or decrease in creatinine consistent with renal function return
        - Voiding adequately or with urinary catheter, percutaneous suprapubic tube, or plan for intermittent self-catheterization, and management regimen in place that is performable at lower level of care
        - Urine output adequate
        - Fever absent or reduced
        - Infection absent or treatable at next level of care
- Venous thrombosis and pulmonary embolism
    - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Dyspnea absent

- New oxygen requirement absent
- Tachypnea absent
- Dangerous arrhythmia absent
- No bleeding or evidence of new emboli
- Pain absent or managed
- No evidence of cardiac dysfunction (eg, right ventricular heart failure)
- Lower extremity examination at baseline, stable, or improved
- Anticoagulation tolerated (eg, no allergic reaction)
- Outpatient anticoagulation plan established
- No requirement for hospital level of care for primary condition or comorbidities

Wound and skin care

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Hemodynamic stability
  - Volume status acceptable (eg, not dehydrated)
  - Mental status at baseline
  - Hypoxemia absent
  - Tachypnea absent
  - Fistulas, tunneling, or underlying deep tissue infection absent or treated
  - Ulcer surgical repair not needed or healing without complications
  - Afebrile or fever improved and appropriate for next level of care
  - Infection resolved or treatment instituted (eg, antibiotics) and performable at next level of care
  - Pain absent or managed
  - Wound closed, continuity adequately restored, or wound manageable at lower level of care
  - No drain needed or drain care manageable at lower level of care
  - Wound hematoma or seroma resolving
  - Dressing care manageable at lower level of care
  - Coagulopathy absent, resolved, or treatable at lower level of care
  - Medical comorbidities resolved or treatable at lower level of care

See Common Complications and Conditions ISC for further information.

See Gastric Restrictive Procedure with Gastric Bypass ISC Optimal Recovery Guideline for further supporting sections.

Discharge Destination

- Post-hospital levels of admission may include:
  - Home.
  - Home healthcare. See Home Care Indications for Admission Section HC in Gastric Obesity Surgery guideline in Home Care.
  - Recovery facility care. See Recovery Facility Care Indications for Admission Section RFC in Gastric Obesity Surgery guideline in Recovery Facility Care.

Footnotes

[A] Overweight is defined as a BMI of 25.0 to 29.9, and obesity as a BMI of 30.0 or greater. [A in Context Link 1, 2, 3]

[B] An evidence-based multispecialty-developed consensus guideline concludes that bariatric surgery is not appropriate for adolescents with type 2 diabetes. [B in Context Link 1]

[C] A multispecialty-developed consensus statement, based upon a systematic review of the published medical literature, concludes that for adult patients with type 2 diabetes (controlled or not) and a BMI of 40 or greater, and for adult patients with inadequately controlled type 2 diabetes whose BMI is 35 to 39.9, bariatric surgery should be recommended to improve glucose control. This same statement concludes that bariatric surgery be considered in adult patients with inadequately controlled type 2 diabetes and a BMI between 30 and 34.9. This evidence review concludes that Roux-en-Y bypass has the most favorable risk/benefit profile for type 2 diabetics, that vertical sleeve gastrectomy is effective, and that gastric banding is only effective to the degree to which it causes weight loss; the review also notes that gastric banding has a higher risk for failure or need for revision. Although effective, due to a higher risk of nutritional deficiencies, it is recommended that biliopancreatic diversion (with or without duodenal switch) be considered only in diabetic patients with a BMI of 60 or greater. It is further recommended that BMI thresholds be reduced by 2.5 in patients of Asian descent. [C in Context Link 1]

[D] A precise definition of adequate glucose control in type 2 diabetes varies to some degree depending on the patient. Nonpregnant adults may have a target hemoglobin A1c less than 7%, while those who are elderly, have a history of severe hypoglycemia, whose life expectancy is limited, who have advanced microvascular or macrovascular complications, or who have serious comorbid illness may have a target of less than 8%. [D in Context Link 1]

[E] Full growth or nearly (95%) full growth is recommended for adolescents before they undergo a bariatric procedure. [E in Context Link 1]

[F] The mean arterial pressure equals diastolic pressure plus ((systolic pressure minus diastolic pressure)/3). [F in Context Link 1, 2]

[G] For the purposes of the Inpatient & Surgical Care guidelines, telemetry is defined as inpatient cardiorespiratory monitoring not performed in an intensive or an intermediate care unit. Cardiorespiratory monitoring may be indicated in the acute stage of a wide variety of conditions and for many severe illnesses that also require intermediate or intensive care treatment. The Telemetry Guidelines list includes only conditions being treated outside an intensive care or intermediate care environment that may require telemetry monitoring. This also assumes that the patient meets clinical indications for admission or continued hospital stay. The presence of a diagnosis on the Telemetry Guidelines list does not necessarily connote a need for inpatient care and monitoring. [G in Context Link 1]

[H] Telemetry monitoring is generally continued until treatment achieves adequate control or arrhythmia is diagnosed to be a stable type not requiring acute intervention. [H in Context Link 1]

[I] Appropriate defibrillator detection and firing requires inpatient monitoring during evaluation of the arrhythmia. Inappropriate firing will require external monitoring until the device is interrogated. [I in Context Link 1]

[J] The initiation of certain antiarrhythmic medications (eg, dofetilide, sotalol, procainamide) may require continuous ECG monitoring for up to 3 days of therapy because of proarrhythmic effects. [J in Context Link 1]

[K] Routine uncomplicated cardiac procedures, such as uncomplicated coronary angiography, do not require cardiac monitoring. [K in Context Link 1]

[L] Dedicated intermediate-level stroke care units are recommended over a telemetry unit for acute ischemic stroke, if available. Cardiac monitoring may be indicated if cardioembolic source (eg, atrial fibrillation) is suspected. [L in Context Link 1]

[M] Cardiac monitoring may be discontinued once the electrolyte abnormality has been corrected. [M in Context Link 1]

[N] Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude. [N in Context Link 1]

Definitions

Altered mental status

- Altered mental status indicated by **1 or more** of the following(1)(2)(3)(4):
  - Confusional state (eg, disorientation, difficulty following commands, deficit in attention)
  - Lethargy (awake or arousable, but with drowsiness; reduced awareness of self and environment)
  - Obtundation (ie, arousable only with strong stimuli, lessened interest in environment, slowed responses to stimulation)
  - Stupor (may be arousable but patient does not return to normal baseline level of awareness)
  - Coma (not arousable)

References

1. Huff JS. Confusion. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:132-7.
2. Lei C, Smith C. Depressed consciousness and coma. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:123-31.
3. Abraham G, Zun LS. Delirium and dementia. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1278-88.
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Altered mental status that is severe or persistent

- Altered mental status that is severe or persistent as indicated by **1 or more** of the following(1)(2)(3)(4):
  - Confusional state (eg, disorientation, difficulty following commands, deficit in attention) that persists (eg, for more than few hours) despite appropriate treatment (eg, of underlying cause)
  - Lethargy (awake or arousable, but with drowsiness; reduced awareness of self and environment) that persists (eg, for more than few hours) despite appropriate treatment (eg, of underlying cause)
  - Obtundation (ie, arousable only with strong stimuli, lessened interest in environment, slowed responses to stimulation)
  - Stupor (may be arousable but patient does not return to normal baseline level of awareness)
  - Coma (not arousable)

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1. Huff JS. Confusion. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:132-7.
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4. MacNeill EC, Vashist S. Approach to syncope and altered mental status. Pediatric Clinics of North America 2013;60(5):1083-106. DOI: 10.1016/j.pcl.2013.06.013.

Bradycardia

- Bradycardia as indicated by **1 or more** of the following(1)(2):
  - Heart rate less than 60 beats per minute in adult or child 6 years or older
  - Heart rate less than 70 beats per minute in child 3 to 5 years of age
  - Heart rate less than 80 beats per minute in child 1 to 2 years of age
  - Heart rate less than 90 beats per minute in infant 6 to 11 months of age
  - Heart rate less than 100 beats per minute in infant 3 to 5 months of age

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2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Cardiac arrhythmias of immediate concern

- Cardiac arrhythmias or findings of immediate concern as indicated by **1 or more** of the following(1)(2):
  - Heart rhythms that are inherently dangerous or unstable as indicated by **1 or more** of the following(3)(4)(5):
    - Resuscitated ventricular fibrillation or cardiac arrest
    - Ventricular escape rhythm
    - Sustained ventricular tachycardia (30 seconds or more of ventricular rhythm at greater than 100 beats per minute)
    - Nonsustained ventricular tachycardia and **1 or more** of the following:
      - Suspected cardiac ischemia as cause or consequence of ventricular tachycardia
      - Acute myocarditis
  - Unstable cardiac conduction defects as indicated by **1 or more** of the following(5)(6)(7):
    - Type II second-degree atrioventricular block
    - Third-degree atrioventricular block
    - New-onset left bundle branch block with suspected myocardial ischemia
  - Any heart rhythm and **1 or more** of the following(3)(4)(8)(9)(10):
    - Continuous long-term ECG monitoring needed (eg, initiation of drug requiring monitoring for more than 24 hours)
    - Patient has automatic implanted cardioverter-defibrillator that is repeatedly firing, malfunctioning, or in need of immediate adjustment of settings beyond scope of ambulatory or observation care.
  - Heart rhythms of concern due to **1 or more** of the following:
    - Hypotension
    - Respiratory distress
    - Association with other significant symptoms (eg, Bradycardia with syncope or ongoing dizziness, supraventricular tachycardia with chest pain)(8)(9)(11)

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Dangerous arrhythmia

- Dangerous arrhythmia as indicated by **1 or more** of the following(1)(2):
  - Heart rhythms that are inherently dangerous or unstable as indicated by **1 or more** of the following(3)(4)(5):
    - Resuscitated ventricular fibrillation or cardiac arrest
    - Ventricular escape rhythm
    - Sustained (30 seconds or more of ventricular rhythm at greater than 100 beats per minute) ventricular tachycardia
    - Nonsustained ventricular tachycardia and **1 or more** of the following:
      - Acute myocarditis
      - Myocardial ischemia
  - Unstable cardiac conduction defects as indicated by **1 or more** of the following(5)(6)(7):
    - Type II second-degree atrioventricular block
    - Third-degree atrioventricular block
    - New-onset left bundle branch block with suspected myocardial ischemia
  - Heart rhythms of concern due to **1 or more** of the following:
    - Hypotension
    - Respiratory distress
    - Association with other significant symptoms; examples include(8)(9)(10):
      - Bradycardia with dizziness or syncope
      - Supraventricular tachycardia with chest pain

References

1. Olgin JE, Zipes DP. Specific arrhythmias: diagnosis and treatment. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:748-97.

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3. El-Chami M, Fernando L. Ventricular arrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1003-14.
4. Al-Khatib SM, et al. 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation 2017;Online. DOI: 10.1161/CIR.0000000000000549. (Reaffirmed 2017 Nov)
5. Epstein AE, et al. 2012 ACCF/AHA/HRS focused update incorporated into the ACCF/AHA/HRS 2008 guidelines for device-based therapy of cardiac rhythm abnormalities: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. Circulation 2013;127(3):e283-352. DOI: 10.1161/CIR.0b013e318276ce9b. (Reaffirmed 2017 May)
6. Miller JM, Zipes DP. Therapy for cardiac arrhythmias. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:685-720.
7. Park DS, Fishman GI. The cardiac conduction system. Circulation 2011;123(8):904-15. DOI: 10.1161/CIRCULATIONAHA.110.942284.
8. January CT, et al. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association task force on practice guidelines and the Heart Rhythm Society. Circulation 2014;130(23):e199-267. DOI: 10.1161/CIR.0000000000000041. (Reaffirmed 2017 Oct)
9. Chun EB, McGorisk GM. Supraventricular tachyarrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:980-95.
10. Westerman S, Manogue M, Hoskins MH. Bradycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:996-1002.

Dangerous arrhythmia absent

- Dangerous arrhythmia absent as indicated by absence of **ALL** of the following(1)(2)(3)(4)(5)(6)(7)(8)(9)(10):
  - Resuscitated ventricular fibrillation or cardiac arrest
  - Ventricular escape rhythm
  - Sustained (30 seconds or more of ventricular rhythm at greater than 100 beats per minute) ventricular tachycardia
  - Nonsustained ventricular tachycardia with myocarditis or ischemia
  - Type II second-degree atrioventricular block
  - Third-degree atrioventricular block
  - New-onset left bundle branch block with suspected myocardial ischemia
  - Heart rhythms of concern due to association with Hypotension, Respiratory distress, or other significant symptoms such as Bradycardia with syncope or Tachycardia with chest pain

References

1. Olgin JE, Zipes DP. Specific arrhythmias: diagnosis and treatment. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:748-97.
2. Van Hare GF. Disturbances of rate and rhythm of the heart. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:2250-61.
3. El-Chami M, Fernando L. Ventricular arrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1003-14.
4. Al-Khatib SM, et al. 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation 2017;Online. DOI: 10.1161/CIR.0000000000000549. (Reaffirmed 2017 Nov)
5. Epstein AE, et al. 2012 ACCF/AHA/HRS focused update incorporated into the ACCF/AHA/HRS 2008 guidelines for device-based therapy of cardiac rhythm abnormalities: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. Circulation 2013;127(3):e283-352. DOI: 10.1161/CIR.0b013e318276ce9b. (Reaffirmed 2017 May)
6. Miller JM, Zipes DP. Therapy for cardiac arrhythmias. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:685-720.
7. Park DS, Fishman GI. The cardiac conduction system. Circulation 2011;123(8):904-15. DOI: 10.1161/CIRCULATIONAHA.110.942284.
8. January CT, et al. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association task force on practice guidelines and the Heart Rhythm Society. Circulation 2014;130(23):e199-267. DOI: 10.1161/CIR.0000000000000041. (Reaffirmed 2017 Oct)
9. Chun EB, McGorisk GM. Supraventricular tachyarrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:980-95.
10. Westerman S, Manogue M, Hoskins MH. Bradycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:996-1002.

Hemodynamic instability

- Hemodynamic instability as indicated by **1 or more** of the following(1)(2)(3)(4)(5)(6)(7):
  - Vital sign abnormality not readily corrected by appropriate treatment within 12 to 24 hours as indicated by **1 or more** of the following:
    - Tachycardia that persists despite appropriate treatment (eg, volume repletion, treatment of pain, treatment of underlying cause)
    - Hypotension that persists despite appropriate treatment (eg, volume repletion, treatment of underlying cause)
    - Orthostatic vital sign changes that persist despite appropriate treatment (eg, volume repletion)
  - Vital sign abnormality that is severe as indicated by **1 or more** of the following:
    - Inadequate perfusion as indicated by **1 or more** of the following:
      - Lactate of 2.5 mmol/L (22.5 mg/dL) or more[A](8)(9)
      - Metabolic acidosis (arterial pH less than 7.35) not otherwise explained
      - New abnormal capillary refill (greater than 3 seconds)
      - Reduced urine output
      - Altered mental status
      - Myocardial ischemia

- Mean arterial pressure[B] less than 60 mm Hg
- IV inotropic or vasopressor medication required to maintain adequate blood pressure or perfusion

References

1. Puskarich MA, Jones AE. Shock. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:68-76.
2. Lewis J, Patel B. Shock. In: Gershel JC, Rauch DA, editors. Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics. 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2018:69-78.
3. Hochman JS, Ingbar DH. Cardiogenic shock and pulmonary edema. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1759-64.
4. Munford RS. Severe sepsis and septic shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1751-9.
5. 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):801-10. DOI: 10.1001/jama.2016.0287.
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8. Andersen LW, Mackenhauer J, Roberts JC, Berg KM, Cocchi MN, Donnino MW. Etiology and therapeutic approach to elevated lactate levels. Mayo Clinic Proceedings 2013;88(10):1127-40. DOI: 10.1016/j.mayocp.2013.06.012.
9. Kraut JA, Madias NE. Lactic acidosis. New England Journal of Medicine 2014;371(24):2309-19. DOI: 10.1056/NEJMra1309483.

Footnotes

A. There are numerous causes of an elevated lactate level. The most common are cardiogenic or hypovolemic shock, severe heart failure, severe trauma, or sepsis. However, there are also other etiologies to consider such as vigorous exercise, seizures, liver disease, or medication use (eg, metformin, beta2-agonists); therefore, interpretation of elevated lactate levels requires consideration of the clinical context (eg, well appearing post exercise vs hypotensive). The severity and persistence of the elevation can sometimes be helpful in this differentiation. In most instances of lactic acidosis, blood pH is less than 7.35, with a serum bicarbonate level 20 mEq/L (mmol/L) or lower. However, a coexisting respiratory or metabolic alkalosis can mask these findings.(8)(9)

B. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as mean arterial pressure (MAP) equals 1/3 SBP + 2/3 DBP.(1)(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)(3)(4)(5):
    - Tachycardia absent
    - Hypotension absent
    - No evidence of inadequate perfusion (eg, no myocardial ischemia)
    - No other hemodynamic abnormalities (eg, no Orthostatic vital sign changes)

References

1. Puskarich MA, Jones AE. Shock. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:68-76.
2. Lewis J, Patel B. Shock. In: Gershel JC, Rauch DA, editors. Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics. 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2018:69-78.
3. Hochman JS, Ingbar DH. Cardiogenic shock and pulmonary edema. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1759-64.
4. Munford RS. Severe sepsis and septic shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1751-9.
5. 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):801-10. DOI: 10.1001/jama.2016.0287.

Hypotension

- Hypotension as indicated by **ALL** of the following(1)(2)(3)(4):
  - Not patient baseline (eg, healthy adult with low SBP) or intentional therapeutic goal (eg, low SBP as treatment goal in heart failure)
  - Low blood pressure as indicated by **1 or more** of the following:
    - SBP less than 90 mm Hg in adult or child 10 years or older
    - Decrease in baseline SBP greater than 40 mm Hg in adult or child 10 years or older
    - Mean arterial pressure[A] less than 70 mm Hg in adult or child 10 years or older
    - Decrease in baseline mean arterial pressure[A] by 25% or more
    - SBP less than sum of 70 mm Hg plus twice patient's age in years in child 1 to 9 years of age
    - SBP less than 70 mm Hg in infant 1 to 11 months of age

References

1. Jones D, Di Francesco L. Hypotension. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:657-64.
2. Maier RV. Approach to the patient with shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1744-51.
3. Horeczko T, Inaba AS. Cardiac disorders. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:2099-125.

4. Huang MG, Santillanes G. General approach to the pediatric patient. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1985-93.

Footnotes

A. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as Mean Arterial Pressure (MAP) = 1/3 SBP + 2/3 DBP.

Hypotension absent

- Hypotension absent as indicated by **1 or more** of the following(1)(2)(3)(4):
  - SBP greater than or equal to 90 mm Hg and without recent decrease greater than 40 mm Hg from baseline in adult or child 10 years or older
  - Mean arterial pressure[A] greater than or equal to 70 mm Hg in adult or child 10 years or older
  - Mean arterial pressure[A] at patient's baseline (eg, healthy adult with low SBP), or at intentional therapeutic goal (eg, patient with heart failure)
  - SBP greater than or equal to sum of 70 mm Hg plus twice patient's age in years in child 1 to 9 years of age
  - SBP greater than or equal to 70 mm Hg in infant 1 to 11 months of age

References

1. Jones D, Di Francesco L. Hypotension. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:657-64.
2. Maier RV. Approach to the patient with shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1744-51.
3. Horeczko T, Inaba AS. Cardiac disorders. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:2099-125.
4. Huang MG, Santillanes G. General approach to the pediatric patient. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1985-93.

Footnotes

A. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as Mean Arterial Pressure (MAP) = 1/3 SBP + 2/3 DBP.

Hypothermia

- Hypothermia indicated by core (eg, rectal) body temperature less than or equal to 95 degrees F (35 degrees C)(1)

References

1. Zafren K, Danzl DF. Accidental hypothermia. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1743-54.

Hypoxemia

- Hypoxemia as indicated by **1 or more** of the following(1):
  - Previously normal respiratory status with **1 or more** of the following:
    - Arterial oxygen saturation (SaO_2) less than 90% or arterial partial pressure of oxygen (PO_2) less than 60 mm Hg (8.0 kPa) on room air[A]
    - Oxygen required to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa) (ie, saturation below 90% on room air)
  - Chronic lung disease with **1 or more** of the following(2):
    - New requirement for supplemental oxygen to keep SaO_2 at baseline or acceptable level
    - Required supplemental oxygen performable only in acute inpatient setting

References

1. Dezube R, Lechtzin N. Hypoxia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:669-75.
2. Staton GW, Ochoa CD. Chronic obstructive pulmonary disease. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1887-87.

Footnotes

A. Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude.(1)

Hypoxemia absent

- Hypoxemia absent as indicated by absence of **ALL** of the following(1):
  - New SaO_2 less than 90% or PO_2 less than 60 mm Hg (8.0 kPa) on room air[A]
  - New oxygen requirement to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa)
  - Chronic lung disease with new requirement for supplemental oxygen that is needed to keep SaO_2 at baseline or acceptable level, or is only performable in acute inpatient setting

References

1. Dezube R, Lechtzin N. Hypoxia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:669-75.

Footnotes

A. Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude.(1)

Orthostatic vital sign changes

- Orthostatic vital sign changes as indicated by **1 or more** of the following(1)(2):
  - 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):317-24. DOI: 10.1016/j.jash.2013.04.006. (Reaffirmed 2017 May)
2. Whelton PK, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Journal of the American College of Cardiology 2017;Online. DOI: 10.1016/j.jacc.2017.11.006.

Reduced urine output

- Reduced urine output as indicated by **1 or more** of the following(1)(2):
  - Urine output less than 0.5 mL/kg/hour for 6 hours in adult
  - Anuria (urine output less than 0.1 mL/kg/hour) for 4 hours in any age group
  - Reduced output in child as indicated by **1 or more** of the following(3):
    - Urine output less than 2 mL/kg/hour for 6 hours in infant younger than 2 years
    - Urine output less than 1 mL/kg/hour for 6 hours in child younger than 12 years
    - Urine output less than 0.75 mL/kg/hour for 6 hours in adolescent younger than 18 years

References

1. Acute kidney injury: prevention, detection and management of acute kidney injury up to the point of renal replacement therapy. NICE clinical guidance CG169 [Internet] National Institute for Health and Care Excellence. 2013 Aug (NICE reviewed 2017) Accessed at: http://www.nice.org.uk/guidance. [accessed 2017 Sep 19]
2. Kidney Disease: Improving Global Outcomes (KDIGO) Acute Kidney Injury Work Group. KDIGO clinical practice guideline for acute kidney injury. Kidney International. Supplement 2012;2(1):1-138. (Reaffirmed 2017 May)
3. Sreedharan R, Avner ED. Renal failure. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:2539-47.

Respiratory distress

- Respiratory distress as indicated by **ALL** of the following(1)(2):
  - Patient with **1 or more** of the following:
    - Dyspnea (difficulty breathing)
    - Tachypnea
    - Abnormal breathing pattern (eg, chest retractions)
    - Other evidence of difficulty breathing
  - Evidence of respiratory compromise as indicated by **1 or more** of the following:
    - Hypoxemia
    - Altered mental status
    - Other evidence of respiratory compromise (eg, pulmonary edema on chest x-ray)

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Naureckas ET, Solway J. Disturbances of respiratory function. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1663.

Tachycardia

- Tachycardia as indicated by **1 or more** of the following(1)(2):
  - Heart rate greater than 100 beats per minute in adult or child age 6 years or older
  - Heart rate greater than 115 beats per minute in child 3 to 5 years of age
  - Heart rate greater than 125 beats per minute in child 1 or 2 years of age
  - Heart rate greater than 130 beats per minute in infant 6 to 11 months of age
  - Heart rate greater than 150 beats per minute in infant 3 to 5 months of age
  - Heart rate greater than 160 beats per minute in infant 1 or 2 months of age

References

1. Southmayd GL. Tachycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:729-39.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachycardia absent

- Tachycardia absent as indicated by **1 or more** of the following(1)(2):
  - Heart rate less than or equal to 100 beats per minute in adult or child 6 years or older
  - Heart rate less than or equal to 115 beats per minute in child 3 to 5 years of age
  - Heart rate less than or equal to 125 beats per minute in child 1 or 2 years of age
  - Heart rate less than or equal to 130 beats per minute in infant 6 to 11 months of age
  - Heart rate less than or equal to 150 beats per minute in infant 3 to 5 months of age
  - Heart rate less than or equal to 160 beats per minute in infant 1 or 2 months of age

References

1. Southmayd GL. Tachycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:729-39.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachypnea

- Tachypnea as indicated by respiratory rate of **1 or more** of the following(1)(2):
  - Greater than 18 breaths per minute in adult or child age 12 years or older
  - Greater than 22 breaths per minute in child 6 to 11 years of age
  - Greater than 25 breaths per minute in child 3 to 5 years of age
  - Greater than 30 breaths per minute in child 1 or 2 years of age
  - Greater than 40 breaths per minute in infant 6 to 11 months of age
  - Greater than 45 breaths per minute in infant 3 to 5 months of age
  - Greater than 60 breaths per minute in infant 1 or 2 months of age

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachypnea absent

- Tachypnea absent as indicated by respiratory rate of **1 or more** of the following(1)(2):
  - Less than or equal to 18 breaths per minute in adult or child 12 years of age or older
  - Less than or equal to 22 breaths per minute in child 6 to 11 years of age
  - Less than or equal to 25 breaths per minute in child 3 to 5 years of age
  - Less than or equal to 30 breaths per minute in child 1 or 2 years of age
  - Less than or equal to 40 breaths per minute in infant 6 to 11 months of age
  - Less than or equal to 45 breaths per minute in infant 3 to 5 months of age
  - Less than or equal to 60 breaths per minute in infant 1 or 2 months of age

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Vital sign abnormality

- Vital sign abnormality as indicated by **ALL** of the following:
  - Vital sign findings not as expected for chronic patient condition or baseline (eg, intentionally low blood pressure in heart failure)
  - Vital sign abnormality as indicated by **1 or more** of the following:
    - Tachycardia
    - Hypotension
    - Orthostatic vital sign changes

Codes

ICD-10 Diagnosis: E66.01, E66.2

ICD-10 Procedure: 0D160ZA, 0D160ZB, 0DB60ZZ, 0DV60ZZ

CPT®: 43846, 43847

Last Update: 5/14/2018 10:19:27 PM
Build Number: 22.1.102576.004582

Gastric Restrictive Procedure without Gastric Bypass by Laparoscopy RRG

MCG Health
Inpatient & Surgical Care
22nd Edition

RRG: S-515-RRG (ISC)
Link to Codes

Clinical Indications for Procedure and Care

- Procedure is indicated by **ALL** of the following:
  - Severity of obesity judged appropriate for procedure as indicated by **1 or more** of the following:
    - Patient has BMI[A] of 40 or greater. BMI Calculator
    - Patient has BMI[A] of 30 or greater and clinically serious condition related to obesity (eg, obesity hypoventilation, obstructive sleep apnea). BMI Calculator
    - Adult patient[B] has BMI[A] of 30 or greater with type 2 diabetes mellitus with inadequately controlled hyperglycemia (eg, hemoglobin A1c greater than 8% (64 mmol/mol) despite optimal medical treatment (eg, oral medication, insulin)).[C][D]
  - Patient is candidate for bariatric surgery as indicated by **ALL** of the following:
    - Failure to achieve and maintain significant weight loss with nonsurgical treatment
    - Correctable cause for obesity not identified (eg, endocrine disorder)
    - Patient has demonstrated reliable participation in preoperative weight-loss program that is multidisciplinary (eg, low-calorie diet, supervised exercise, behavior modification)
    - Current substance abuse not identified
    - Patient is fully grown or nearly fully grown.[E]
    - Expectation that patient will be able to adhere to postoperative care (eg, judged to be committed and able to participate in postoperative requirements)
    - Patient is receiving treatment in multidisciplinary program experienced in obesity surgery that can provide **ALL** of the following:
      - Surgeons experienced with procedure
      - Preoperative medical consultation and approval
      - Preoperative psychiatric consultation and approval
      - Nutritional counseling
      - Exercise counseling
      - Psychological counseling
      - Support group meetings

See Gastric Restrictive Procedure without Gastric Bypass by Laparoscopy ISC Optimal Recovery Guideline for further supporting sections.

Operative Status Assignment

Goal Length of Stay: Ambulatory

In some situations procedures that might otherwise be performed on an ambulatory basis may require inpatient care. In some cases this need can be identified preoperatively; in other cases this need is due to postoperative events or clinical findings (eg, failure to meet discharge readiness milestones).

See Discharge Readiness or Extended Stay section in this guideline, or Ambulatory Surgery Exception Criteria GRG, as appropriate.

- **Operative Status Criteria: Ambulatory**

Level of Care Criteria

For patient conditions requiring more than routine inpatient care, documentation of need may be done using the [**Level of Care**] chart.

Intensive Care	Intermediate Care	Telemetry Care
• ICU admission may be indicated when need is demonstrated by **1 or more** of the following:	• Intermediate care admission may be indicated after intensive care treatment (eg, as "step-down" care),	• Telemetry admission[G] may be indicated for **1 or more** of the following:

- Vital sign abnormalities, including **1 or more** of the following:
  - Systolic arterial pressure less than 90 mm Hg, or 20 mm Hg below patient's usual pressure in adult or child 10 years or older
  - Systolic arterial blood pressure less than 70 mm Hg in infant (1 month to 1 year of age), or less than the sum of 70 mm Hg plus twice the patient's age in child 2 to 10 years of age
  - Diastolic arterial pressure greater than 120 mm Hg
  - Mean arterial pressure less than 70 mm Hg in adult[F]
  - Mean arterial pressure less than the sum of 40 mm Hg plus 1.5 times patient's age in child or adolescent[F]
  - Pulse less than 40 or greater than 140 beats per minute in adult or in adolescent 16 years or older
  - Pulse less than 90 or greater than 160 beats per minute in infant younger than 2 years
  - Pulse less than 70 or greater than 150 beats per minute in child 2 to 7 years of age
  - Respiratory rate greater than 35 or less than 8 breaths per minute in adult
- Laboratory findings (new), including **1 or more** of the following:
  - Saturation of arterial oxygen less than 90% or partial pressure of oxygen less than 60 mm Hg (8.0 kPa) despite oxygen supplementation
  - Rising partial pressure of carbon dioxide with acute or uncompensated respiratory acidosis
  - Arterial pH less than 7.2 or greater than 7.65
  - Serum sodium less than 110 mEq/L (mmol/L) or greater than 160 mEq/L (mmol/L)
  - Serum sodium less than 125 mEq/L (mmol/L) with Altered mental status, seizure, or respiratory arrest
  - Serum sodium more than 145 mEq/L (mmol/L) with Altered mental status, seizure, or severe dehydration requiring large-volume fluid resuscitation
  - Serum potassium less than 2 mEq/L (mmol/L) or greater than 7 mEq/L (mmol/L)
  - Serum potassium less than 2.5 mEq/L (mmol/L) with severe clinical or electrocardiogram manifestations (eg, paralysis, cardiac arrhythmia, delayed depolarization, flat T waves, or U waves)
  - Serum potassium greater than 6 mEq/L (mmol/L) with electrocardiogram changes of hyperkalemia (eg, peaked T waves, widened QRS, cardiac arrhythmia)
  - Serum calcium greater than 14 mg/dL (3.5 mmol/L)
  - Serum calcium greater than 12 mg/dL (3.0 mmol/L) with Altered mental status, severe volume depletion requiring large-volume IV fluid resuscitation, Hypotension, significant arrhythmia, heart block, or digitalis toxicity
  - Serum phosphorus less than 1 mg/dL (0.32 mmol/L)

or to provide higher level of care than general hospital ward (eg, as "step-up" care in absence of intensive care admission needs) (see Intensive Care Guidelines ISC), as indicated by **1 or more** of the following:

- Intermediate level monitoring or care needed as indicated by **1 or more** of the following:
  - Care requiring nurse-to-patient ratio of 1 to 2 or 1 to 3; examples include:
    - Complex wound management
    - Profound neuromuscular weakness
    - Postoperative high-risk patient with Hemodynamic stability
  - Frequent (but less frequent than hourly) monitoring, such as vital signs or neurologic checks
  - Stable chronic mechanical ventilator or long-term weaning needs
  - Noninvasive ventilation
  - Peritoneal dialysis
  - Frequent pulmonary therapy with endotracheal suctioning (nonintubated or chronic tracheostomy patient)
  - Rapid diuresis for fluid overload
  - Electrolyte, metabolic, or other problem requiring frequent laboratory testing or treatment adjustments
  - Monitoring of continuous high-level epidural anesthesia
  - Titration of IV vasodilator or antiarrhythmic agents
  - Continuous pulse oximetry monitoring
  - Patient who requires short-term inpatient monitoring (eg, cardiac, wound site, perfusion) after procedure as indicated by **1 or more** of the following:
    - Angioplasty
    - Pacemaker placement with cardiac conduction defect
    - Electrophysiologic studies with such procedures as ablation
    - Implantable cardiac defibrillator placement
- **General Surgery** diagnoses or procedures, including patient with postoperative Hemodynamic stability requiring **1 or more** of the following:
  - Cardiac disease, including **1 or more** of the following:
    - Post-acute MI
    - Low-risk patient with ST-segment elevation MI who has undergone successful percutaneous coronary intervention
    - Unstable angina
    - Suspected MI (until it is ruled out)
    - Post cardiac surgery (first 48 to 72 hours unless complications occur)
    - Dangerous arrhythmia [H] diagnosed or suspected
    - Firing of implantable cardioverter-defibrillator[I]
    - Suspected pacemaker or implantable cardioverter-defibrillator malfunction
    - New administration or adjustment of antiarrhythmic drug[J]
    - Acute myocarditis or pericarditis
    - Child admitted for acute congestive heart failure
    - High-risk ECG findings (eg, bifascicular block, bradycardia, abnormal QT interval, ventricular pre-excitation, other conduction abnormality)
    - New pathologic changes on ECG (eg, new Q waves)
    - Short-term monitoring after cardiac procedure as indicated by **1 or more** of the following[K]:
      - Electrophysiologic studies
      - Implantable cardioverter-defibrillator placement
      - Percutaneous coronary intervention with stent placement
      - Pacemaker placement with cardiac conduction defect
      - Arrhythmia ablation
  - Drug overdose or poisoning with substance that causes Bradycardia, arrhythmia, or QT prolongation (eg, beta-blockers, phenothiazines, sympathomimetic agents, cyclic antidepressants, digitalis, antiarrhythmic drugs)
    - Short-term cardiac monitoring after therapeutic or diagnostic procedure requiring conscious sedation or anesthesia (eg, endoscopy, percutaneous vascular procedures)
    - Acute cerebrovascular event[L]
    - Patients who have received massive blood transfusion (eg, 10 units of packed red blood

- Toxic drug level or poisoning causing or likely to cause neurologic abnormalities or Hemodynamic instability
- Less severe laboratory abnormalities contributing to **1 or more** of the following:
  - Seizure
  - Altered mental status
  - Muscle weakness or severe spasms
  - Arrhythmias
  - Hemodynamic instability
  - Other significant clinical manifestations

− Electrocardiogram (or cardiac monitoring) findings, including **1 or more** of the following:
- Inherently unstable or life-threatening arrhythmia (eg, sustained ventricular tachycardia, ventricular fibrillation, asystole)
- Arrhythmia causing Hypotension (eg, Bradycardia, Tachycardia)
- Complete heart block causing Hypotension
- Other findings indicative of need for intensive care (eg, acute cardiac ischemia, myocardial infarction)

− Physical findings, including **1 or more** of the following:
- Threatened airway
- Altered mental status that is severe or persistent
- Repeated or prolonged seizures
- New-onset anuria (urine output less than 0.1 mL/kg/hour over 4 hours)
- Cyanosis (new)
- Cardiac tamponade
- Status post respiratory or cardiac arrest
- Severe burns (eg, partial thickness burns over more than 10% of body surface, third-degree burns)
- Findings consistent with abdominal emergency (eg, peritoneal signs)

− Imaging findings, such as dissecting aneurysm or ruptured viscus

− Specific intervention or monitoring needed, as indicated by **1 or more** of the following:
- New need for assisted ventilation, invasive or noninvasive
- New need for intubation (eg, to protect airway)
- New tracheostomy (less than 48 hours old)
- Hourly vital signs or neurologic checks
- Pulmonary artery line monitoring needed
- Continuous arterial line monitoring needed
- Continuous IV vasoactive drugs
- Continuous IV antiarrhythmics
- Large volume IV fluid resuscitation (eg, greater than 6 L per day)
- Large or rapid transfusion needs (eg, more than 6 units within 24 hours)
- High-risk IV treatment, such as thrombolysis, hypertonic saline, or mannitol infusion
- Rapid desensitization for high-risk hypersensitivity reaction to required medication (eg, penicillin, monoclonal antibody)
- Acute cardiac pacing
- Intra-aortic balloon pump
- Ventricular assist device
- Close monitoring for first postoperative day (eg, due to risk of procedure, underlying comorbidity, need for frequent blood testing, or surgical or anesthetic complication)
- Fluid resuscitation because of major fluid shifts
- Extensive wound management
- Complex multiple injury care

cells in 24 hours) with Hemodynamic stability, no active bleeding, and low risk for rebleed.
- Short-term cardiac monitoring during and after treatment with medications that increase risk of arrhythmia or bradycardia (eg, lidocaine infusion for pain, neostigmine infusion for treatment of acute colonic pseudo-obstruction, phenytoin infusion for seizure without status epilepticus)

− Uncorrected electrolyte abnormalities associated with increased risk of dangerous arrhythmia[M]; indicated by **1 or more** of the following:
- Hyperkalemia with attributable ECG changes
- Potassium greater than 6.5 mEq/L (mmol/L) in patient without history of chronic renal disease
- Prolonged QT attributed to hypokalemia, hypomagnesemia, or hypocalcemia
- Other clinically significant electrolyte abnormality associated with increased risk of arrhythmia

− Unexplained syncope or other neurologic event suspected of being due to arrhythmia due to finding that increases risk; as indicated by **1 or more** of the following:
- Vital sign abnormality
- Tachypnea
- Altered mental status
- History of heart failure
- History of coronary artery disease
- History of structural heart disease (eg, hypertrophic cardiomyopathy, severe valvular disease, congenital heart disease, rheumatic heart disease)
- Patient reported palpitations or tachycardia preceding syncope.
- Syncope occurring during exercise
- Syncope sudden and without prodrome
- Syncope while supine
- Dangerous arrhythmia suspected as cause as indicated by **1 or more** of the following:
  - History of Dangerous arrhythmia
  - History of previous syncope due to arrhythmia
  - Use of medication known to cause Dangerous arrhythmia
  - Family history of sudden death

- Extracorporeal membrane oxygenation device
- Pericardiocentesis
- Hemodialysis in unstable patient
- Continuous renal replacement therapy (eg, continuous venovenous hemodialysis)
- Continuous fluid removal via hemofiltration (eg, continuous venovenous hemofiltration)
- Peritoneal dialysis initiation
- Emergency bronchoscopic therapy (eg, for hemoptysis)
- Emergency endoscopic therapy for bleeding
- Balloon tamponade for variceal bleeding
- Intracranial pressure monitoring or tissue oxygen monitoring
- Ventriculostomy monitoring
- Treatment of ongoing seizures
- Induced hypothermia or coma
- Ongoing frequent testing and treatment for acute conditions, including **1 or more** of the following:
  - Correction of severe metabolic acidosis or alkalosis
  - Frequent glucose checks (ie, more frequent than performable at lower level of care)
  - Severe fluid overload
  - Cerebral edema
  - Monitoring or suctioning for respiratory insufficiency or acidosis
  - Monitoring for active bleeding
- Other need for treatment or monitoring not available outside the ICU

− **Systemic conditions**, including **1 or more** of the following:

- Severe electrolyte or metabolic disturbance causing or likely to cause **1 or more** of the following:
  - Life-threatening cardiac dysrhythmia
  - Respiratory insufficiency
  - Altered mental status
  - Seizures
  - Hemodynamic instability
  - Muscular weakness
- Environmental injuries such as Hypothermia, hyperthermia, electrical injuries, or near drowning
- Anaphylaxis with respiratory compromise, Hypotension, or other end organ dysfunction
- Confirmed or suspected malignant hyperthermia as evidenced by exposure to volatile anesthetic agent or succinylcholine and **1 or more** of the following:
  - Hypermetabolism as evidenced by inappropriately increased CO_2 production, O_2 consumption, or acute mixed metabolic and respiratory acidosis
  - Unexplained Tachycardia
  - Cardiac tachyarrhythmias, ectopic ventricular beats or ventricular bigeminy
  - Masseter spasm
  - Muscle rigidity
  - Rapid increase in core body temperature
  - Presentation consistent with acute coronary syndrome (eg, suspicious chest pain)
  - Multiple syncopal episodes within last 6 months
  - Known channelopathy (eg, long QT syndrome, Brugada syndrome, or catecholaminergic paroxysmal ventricular tachycardia)
- Abnormal ECG as indicated by **1 or more** of the following:
  - High-risk ECG findings (eg, bifascicular block, bradycardia, abnormal QT interval, ventricular pre-excitation, other conduction abnormality)
  - New pathologic changes on ECG (eg, new Q waves)
  - Cardiac rhythm other than normal sinus

- Acute rise in serum potassium, creatine kinase, or myoglobin

- Neuroleptic malignant syndrome as evidenced by exposure to neuroleptic drug (eg, phenothiazine, butyrophenone) or dopamine-depleting drug (eg, alpha-methyltyrosine), or withdrawal of dopaminergic agent (eg, L-dopa, amantadine) and **1 or more** of the following:
  - Muscle rigidity
  - Hyperthermia
  - Altered mental status
  - Hemodynamic instability
  - Acute rise in creatine kinase
- Serotonin syndrome (serotonin toxicity) as evidenced by exposure to medication(s) that increases level of serotonin in CNS (eg, some antidepressants including serotonin reuptake inhibitors, monoamine oxidase inhibitors, opioids, stimulants, triptans, anticonvulsant agents, linezolid) and **1 or more** of the following:
  - Significant neurologic finding (eg, agitation, hypomania, hallucinations, Altered mental status)
  - Significant autonomic nervous system-related finding (eg, sweating, hyperthermia, tachycardia, vomiting)
  - Significant musculoskeletal findings (eg, myoclonus, hyperreflexia, tremor, rhabdomyolysis, elevated creatinine kinase)
- Severe alcohol withdrawal with **1 or more** of the following:
  - Hemodynamic instability
  - Cardiac arrhythmias of immediate concern
  - Uncontrolled seizures
  - Respiratory depression with need for, or high likelihood of requiring, mechanical ventilation
  - Need for anesthetic agent to control agitation (eg, dexmedetomidine, propofol, ketamine)
  - Delirium tremens as evidenced by **ALL** of the following:
    - Cessation of, or reduction in, heavy and prolonged alcohol use
    - Delirium (eg, fluctuating disturbance in attention, awareness, orientation, language)
    - Signs or symptoms of alcohol withdrawal as indicated by **2 or more** of the following:
      - Autonomic hyperactivity (diaphoresis, tachycardia, hypertension)
      - Tremor
      - Nausea or vomiting

- Hallucinations
- Increased anxiety
- Psychomotor agitation
- Generalized tonic-clonic seizures

− **General Surgery** diagnoses or procedures, including **1 or more** of the following:

- Acute abdominal catastrophe (eg, ischemic bowel, perforated viscus, abdominal compartment syndrome)
- Complications of any surgery requiring ICU intervention as indicated by **1 or more** of the following:
  - Hemodynamic instability
  - MI with complications (eg, severe arrhythmia, Hypotension)
  - Excessive bleeding or severe coagulopathy
  - Respiratory failure or insufficiency
  - Renal failure
  - Airway instability or obstruction
  - Neurologic deterioration
  - Infection with Hypotension or significant fluid shifts
- Multiple trauma with complicating features as indicated by **1 or more** of the following:
  - Serious injury involving more than one organ or system
  - Single organ injury requiring critical care intervention or monitoring (eg, invasive hemodynamic monitoring, frequent vital signs or neurologic checks)
  - Impending acute respiratory failure due to lung contusion, unstable chest wall, aspiration, hemorrhage, tension or open pneumothorax, or fat embolism
  - Facial or neck injury threatening airway patency
  - Cardiac contusion
  - Pericardial effusion
  - Bronchial tear
  - Hemodynamic instability
  - Rhabdomyolysis requiring large-volume IV fluid resuscitation
  - Other significant complicating feature
- Organ transplant
- Esophagectomy
- Pancreatectomy (eg, Whipple procedure)
- Necrotizing soft tissue infection (eg, necrotizing fasciitis, Fournier gangrene)
- Preoperative or postoperative patient requiring ICU intervention, such as hemodynamic optimization, pulmonary artery monitoring, mechanical ventilation, or extensive nursing care
- Obesity surgery patient with **1 or more** of the following:
  - ICU management needs for comorbid conditions (eg, airway issues due to severe sleep apnea)
  - Failed postoperative extubation

• Intraoperative complications (eg, perforated viscus, bleeding)		

Hospitalization

Goal Length of Stay: Ambulatory

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.

Discharge Readiness

- Discharge readiness is indicated by patient meeting Recovery Milestones, including **ALL** of the following:
  - **Hemodynamic stability**
  - **No evidence of infection**
  - **Pain and nausea absent or managed**
  - **Ambulatory postoperatively**
  - **Oral hydration, medications, and liquid diet postoperatively**
  - **Discharge plans and education understood**

See Gastric Restrictive Procedure without Gastric Bypass by Laparoscopy Optimal Recovery Course ISC for full optimal recovery management information.

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).

- Inpatient stay may be needed for:
  - Failure to achieve discharge status criteria. See Ambulatory Surgery Discharge and Complications: Common Complications and Conditions ISC guideline.
  - Conversion to open procedure
  - Clear liquid diet not tolerated
  - Complications of procedure, including iatrogenic gastric perforation, leak, peritonitis, thromboembolic disease, splenic injury, liver injury, or band malposition with outlet obstruction
  - Care for comorbidities such as chronic obstructive pulmonary disease, renal disease, or heart failure
  - Performance of vertical banded gastroplasty
  - Age older than 65 years
  - Other complication or condition, including:
    - Anemia
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Active blood loss absent
        - Signs and symptoms of anemia absent or improved
        - Mental status normal or at baseline
        - Hgb/Hct level stable and acceptable for next level of care
        - Etiology of anemia requiring inpatient care absent
    - Arrhythmia
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Arrhythmia evaluation completed
        - Reversible causes of arrhythmia eliminated or mitigated
        - Specific antiarrhythmia treatment initiated as appropriate
        - Anticoagulation requirements addressed (or anticoagulation not required). See Anticoagulation Requirement: Common Complications and Conditions ISC for further information.
        - Medical comorbidities manageable at lower level of care
    - Electrolyte disorder
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Electrolyte abnormality manageable at lower level of care
        - Sodium greater than 135 mEq/L (mmol/L) and less than 145 mEq/L (mmol/L) or at acceptable chronic level
        - Potassium greater than 3 mEq/L (mmol/L) and less than 5 mEq/L (mmol/L) or at acceptable chronic level
        - Calcium level greater than 8 mg/dL (2 mmol/L) and less than 12 mg/dL (3 mmol/L) or at acceptable chronic level
        - Appropriate oral intake
        - Appropriate urinary output
    - Fever
      - Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
        - Hemodynamic stability
        - Hypoxemia absent as indicated by absence of **ALL** of the following:
          - New SaO_2 less than 90% or PO_2 less than 60 mm Hg (8.0 kPa) on room air[N]
          - New oxygen requirement to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa)
          - Chronic lung disease with new requirement for supplemental oxygen that is needed to keep SaO_2 at baseline or acceptable level, or is only performable in acute inpatient setting

- Tachypnea absent as indicated by respiratory rate of **1 or more** of the following:
  - Less than or equal to 18 breaths per minute in adult or child 12 years of age or older
  - Less than or equal to 22 breaths per minute in child 6 to 11 years of age
  - Less than or equal to 25 breaths per minute in child 3 to 5 years of age
  - Less than or equal to 30 breaths per minute in child 1 or 2 years of age
  - Less than or equal to 40 breaths per minute in infant 6 to 11 months of age
  - Less than or equal to 45 breaths per minute in infant 3 to 5 months of age
  - Less than or equal to 60 breaths per minute in infant 1 or 2 months of age
- Temperature status acceptable as indicated by **1 or more** of the following:
  - Temperature less than 100.5 degrees F (38.1 degrees C) (oral)
  - Temperature as expected for disease process and care performable at next level of care
- Cultures negative or infection identified and under adequate treatment
- No condition, organ dysfunction (eg, renal failure), or laboratory finding (eg, acidosis) identified that requires inpatient care
- Behavior or mental status abnormalities absent or manageable at lower level of care. See Mental Status Change: Common Complications and Conditions ISC for further information.
- Adequate diet tolerated
- Medical comorbidities absent or manageable at lower level of care

Gastrointestinal bleeding

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Hemodynamic stability
  - Bleeding absent
  - Stable Hgb/Hct
  - Platelet count, prothrombin time, and partial thromboplastin time acceptable for next level of care
  - Surgical or other acute intervention not needed
  - Mental status at baseline
  - Pain absent or managed
  - Oral hydration and diet tolerated

Hyperglycemia and diabetes control

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Hemodynamic stability
  - Glucose level acceptable and stable
  - Outpatient glucose management regimen arranged (ie, patient or caregiver has access to medication and supplies, understands treatment regimen, and is judged to be able to adhere to regimen)
  - Mental status at baseline
  - Dehydration absent
  - Nausea and vomiting absent or controlled
  - Oral intake adequate (ie, able to maintain oral hydration and tolerate a diet)
  - Electrolyte abnormalities absent or acceptable for outpatient treatment
  - Acidosis absent
  - Precipitating factors for glucose abnormality absent or identified and managed
  - Follow-up at next level of care planned

Mental status change

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Underlying medical etiology of mental status change is absent, or has been established and adequately treated.
  - Danger to self or others is absent or manageable at lower level of care.
  - Behavior crisis management, including physical or chemical restraints, is not required or is available at lower level of care.
  - Substance or alcohol withdrawal is absent or manageable at lower level of care.
  - Behavioral symptoms (eg, agitation, somnolence, inappropriate behavior) are absent or manageable at lower level of care.

Psychiatric disorders

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Danger to self or others is absent or manageable at lower level of care.
  - Behavior crisis management, including physical or chemical restraints, is not required or is available at lower level of care.
  - Behavioral symptoms (eg, agitation, somnolence, inappropriate behavior) are absent or manageable at lower level of care.
  - Patient and supports understand follow-up treatment and crisis plan.
  - Provider and supports are sufficiently available at lower level of care.
  - Patient can participate (eg, verify absence of plan for harm) in needed monitoring.

Respiratory insufficiency

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Evaluation of cause of respiratory insufficiency complete
  - Suctioning, pulmonary toilet, or other therapy performable at lower level of care
  - Respiratory insufficiency has resolved or is manageable at lower level of care.
  - Anticoagulation treatment is not needed or can be performed at lower level of care.
  - Medical comorbidities manageable at lower level of care

Urinary complications

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Renal function (creatinine) at baseline, or decrease in creatinine consistent with renal function return
  - Voiding adequately or with urinary catheter, percutaneous suprapubic tube, or plan for intermittent self-catheterization, and management regimen in place that is performable at lower level of care
  - Urine output adequate
  - Fever absent or reduced
  - Infection absent or treatable at next level of care

Venous thrombosis and pulmonary embolism

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:

- Hemodynamic stability
- Dyspnea absent
- New oxygen requirement absent
- Tachypnea absent
- Dangerous arrhythmia absent
- No bleeding or evidence of new emboli
- Pain absent or managed
- No evidence of cardiac dysfunction (eg, right ventricular heart failure)
- Lower extremity examination at baseline, stable, or improved
- Anticoagulation tolerated (eg, no allergic reaction)
- Outpatient anticoagulation plan established
- No requirement for hospital level of care for primary condition or comorbidities

Wound and skin care

- Extended stay beyond goal length of stay for primary condition may be needed until **ALL** of the following are present:
  - Hemodynamic stability
  - Volume status acceptable (eg, not dehydrated)
  - Mental status at baseline
  - Hypoxemia absent
  - Tachypnea absent
  - Fistulas, tunneling, or underlying deep tissue infection absent or treated
  - Ulcer surgical repair not needed or healing without complications
  - Afebrile or fever improved and appropriate for next level of care
  - Infection resolved or treatment instituted (eg, antibiotics) and performable at next level of care
  - Pain absent or managed
  - Wound closed, continuity adequately restored, or wound manageable at lower level of care
  - No drain needed or drain care manageable at lower level of care
  - Wound hematoma or seroma resolving
  - Dressing care manageable at lower level of care
  - Coagulopathy absent, resolved, or treatable at lower level of care
  - Medical comorbidities resolved or treatable at lower level of care

See Common Complications and Conditions ISC for further information.

See Gastric Restrictive Procedure without Gastric Bypass by Laparoscopy ISC Optimal Recovery Guideline for further supporting sections.

Discharge Destination

- Post-hospital levels of admission may include:
  - Home.
  - Home healthcare. See Home Care Indications for Admission Section HC in Gastric Obesity Surgery guideline in Home Care.
  - Recovery facility care. See Recovery Facility Care Indications for Admission Section RFC in Gastric Obesity Surgery guideline in Recovery Facility Care.

Footnotes

[A] Overweight is defined as a BMI of 25.0 to 29.9, and obesity as a BMI of 30.0 or greater. [A in Context Link 1, 2, 3]

[B] An evidenced-based multispecialty-developed consensus guideline concludes that bariatric surgery is not appropriate for adolescents with type 2 diabetes. [B in Context Link 1]

[C] A multispecialty-developed consensus statement, based upon a systematic review of the published medical literature, concludes that for adult patients with type 2 diabetes (controlled or not) and a BMI of 40 or greater, and for adult patients with inadequately controlled type 2 diabetes whose BMI is 35 to 39.9, bariatric surgery should be recommended to improve glucose control. This same statement concludes that bariatric surgery be considered in adult patients with inadequately controlled type 2 diabetes and a BMI between 30 and 34.9. This evidence review concludes that Roux-en-Y bypass has the most favorable risk/benefit profile for type 2 diabetics, that vertical sleeve gastrectomy is effective, and that gastric banding is only effective to the degree to which it causes weight loss; the review also concluded that gastric banding has a higher risk for failure or need for revision. Although effective, due to higher risk of nutritional deficiencies, it is recommended that biliopancreatic diversion (with or without duodenal switch) be considered only in diabetic patients with a BMI of 60 or greater. It is further recommended that BMI thresholds be reduced by 2.5 in patients of Asian descent. [C in Context Link 1]

[D] A precise definition of adequate glucose control in type 2 diabetes varies to some degree depending on the patient. Nonpregnant adults may have a target hemoglobin A1c less than 7%, while those who are elderly, have a history of severe hypoglycemia, whose life expectancy is limited, who have advanced microvascular or macrovascular complications, or who have serious comorbid illness may have a target of less than 8%. [D in Context Link 1]

[E] Full growth or nearly (95%) full growth is recommended for adolescents before they undergo a bariatric procedure. [E in Context Link 1]

[F] The mean arterial pressure equals diastolic pressure plus ((systolic pressure minus diastolic pressure)/3). [F in Context Link 1, 2]

[G] For the purposes of the Inpatient & Surgical Care guidelines, telemetry is defined as inpatient cardiorespiratory monitoring not performed in an intensive or an intermediate care unit. Cardiorespiratory monitoring may be indicated in the acute stage of a wide variety of conditions and for many severe illnesses that also require intermediate or intensive care treatment. The Telemetry Guidelines list includes only conditions being treated outside an intensive care or intermediate care environment that may require telemetry monitoring. This also assumes that the patient meets clinical indications for admission or continued hospital stay. The presence of a diagnosis on the Telemetry Guidelines list does not necessarily connote a need for inpatient care and monitoring. [G in Context Link 1]

[H] Telemetry monitoring is generally continued until treatment achieves adequate control or arrhythmia is diagnosed to be a stable type not requiring acute intervention. [H in Context Link 1]

[I] Appropriate defibrillator detection and firing requires inpatient monitoring during evaluation of the arrhythmia. Inappropriate firing will require external monitoring until the device is interrogated. [I in Context Link 1]

[J] The initiation of certain antiarrhythmic medications (eg, dofetilide, sotalol, procainamide) may require continuous ECG monitoring for up to 3 days of therapy because of proarrhythmic effects. [J in Context Link 1]

[K] Routine uncomplicated cardiac procedures, such as uncomplicated coronary angiography, do not require cardiac monitoring. [K in Context Link 1]

[L] Dedicated intermediate-level stroke care units are recommended over a telemetry unit for acute ischemic stroke, if available. Cardiac monitoring may be indicated if cardioembolic source (eg, atrial fibrillation) is suspected. [L in Context Link 1]

[M] Cardiac monitoring may be discontinued once the electrolyte abnormality has been corrected. [M in Context Link 1]

[N] Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude. [N in Context Link 1]

Definitions

Altered mental status

- Altered mental status indicated by **1 or more** of the following(1)(2)(3)(4):
  - Confusional state (eg, disorientation, difficulty following commands, deficit in attention)
  - Lethargy (awake or arousable, but with drowsiness; reduced awareness of self and environment)
  - Obtundation (ie, arousable only with strong stimuli, lessened interest in environment, slowed responses to stimulation)
  - Stupor (may be arousable but patient does not return to normal baseline level of awareness)
  - Coma (not arousable)

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1. Huff JS. Confusion. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:132-7.
2. Lei C, Smith C. Depressed consciousness and coma. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:123-31.
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4. MacNeill EC, Vashist S. Approach to syncope and altered mental status. Pediatric Clinics of North America 2013;60(5):1083-106. DOI: 10.1016/j.pcl.2013.06.013.

Altered mental status that is severe or persistent

- Altered mental status that is severe or persistent as indicated by **1 or more** of the following(1)(2)(3)(4):
  - Confusional state (eg, disorientation, difficulty following commands, deficit in attention) that persists (eg, for more than few hours) despite appropriate treatment (eg, of underlying cause)
  - Lethargy (awake or arousable, but with drowsiness; reduced awareness of self and environment) that persists (eg, for more than few hours) despite appropriate treatment (eg, of underlying cause)
  - Obtundation (ie, arousable only with strong stimuli, lessened interest in environment, slowed responses to stimulation)
  - Stupor (may be arousable but patient does not return to normal baseline level of awareness)
  - Coma (not arousable)

References

1. Huff JS. Confusion. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:132-7.
2. Lei C, Smith C. Depressed consciousness and coma. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:123-31.
3. Abraham G, Zun LS. Delirium and dementia. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1278-88.
4. MacNeill EC, Vashist S. Approach to syncope and altered mental status. Pediatric Clinics of North America 2013;60(5):1083-106. DOI: 10.1016/j.pcl.2013.06.013.

Bradycardia

- Bradycardia as indicated by **1 or more** of the following(1)(2):
  - Heart rate less than 60 beats per minute in adult or child 6 years or older
  - Heart rate less than 70 beats per minute in child 3 to 5 years of age
  - Heart rate less than 80 beats per minute in child 1 to 2 years of age
  - Heart rate less than 90 beats per minute in infant 6 to 11 months of age
  - Heart rate less than 100 beats per minute in infant 3 to 5 months of age

References

1. Yealy DM, Kosowsky JM. Dysrhythmias. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:929-58.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Cardiac arrhythmias of immediate concern

- Cardiac arrhythmias or findings of immediate concern as indicated by **1 or more** of the following(1)(2):
  - Heart rhythms that are inherently dangerous or unstable as indicated by **1 or more** of the following(3)(4)(5):
    - Resuscitated ventricular fibrillation or cardiac arrest
    - Ventricular escape rhythm
    - Sustained ventricular tachycardia (30 seconds or more of ventricular rhythm at greater than 100 beats per minute)
    - Nonsustained ventricular tachycardia and **1 or more** of the following:
      - Suspected cardiac ischemia as cause or consequence of ventricular tachycardia
      - Acute myocarditis
  - Unstable cardiac conduction defects as indicated by **1 or more** of the following(5)(6)(7):
    - Type II second-degree atrioventricular block
    - Third-degree atrioventricular block
    - New-onset left bundle branch block with suspected myocardial ischemia
  - Any heart rhythm and **1 or more** of the following(3)(4)(8)(9)(10):
    - Continuous long-term ECG monitoring needed (eg, initiation of drug requiring monitoring for more than 24 hours)
    - Patient has automatic implanted cardioverter-defibrillator that is repeatedly firing, malfunctioning, or in need of immediate adjustment of settings beyond scope of ambulatory or observation care.
  - Heart rhythms of concern due to **1 or more** of the following:
    - Hypotension
    - Respiratory distress
    - Association with other significant symptoms (eg, Bradycardia with syncope or ongoing dizziness, supraventricular tachycardia with chest pain)(8)(9)(11)

References

1. Olgin JE, Zipes DP. Specific arrhythmias: diagnosis and treatment. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:748-97.
2. Van Hare GF. Disturbances of rate and rhythm of the heart. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:2250-61.
3. El-Chami M, Fernando L. Ventricular arrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1003-14.
4. Al-Khatib SM, et al. 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation 2017;Online. DOI: 10.1161/CIR.0000000000000549. (Reaffirmed 2017 Nov)
5. Epstein AE, et al. 2012 ACCF/AHA/HRS focused update incorporated into the ACCF/AHA/HRS 2008 guidelines for device-based therapy of cardiac rhythm abnormalities: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. Circulation 2013;127(3):e283-352. DOI: 10.1161/CIR.0b013e318276ce9b. (Reaffirmed 2017 May)
6. Miller JM, Zipes DP. Therapy for cardiac arrhythmias. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:685-720.
7. Park DS, Fishman GI. The cardiac conduction system. Circulation 2011;123(8):904-15. DOI: 10.1161/CIRCULATIONAHA.110.942284.
8. January CT, et al. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association task force on practice guidelines and the Heart Rhythm Society. Circulation 2014;130(23):e199-267. DOI: 10.1161/CIR.0000000000000041. (Reaffirmed 2017 Oct)
9. Chun EB, McGorisk GM. Supraventricular tachyarrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:980-95.
10. Hoskins MH, De Lurgio DB. Pacemakers, defibrillators, and cardiac resynchronization devices in hospital medicine. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1025-34.
11. Westerman S, Manogue M, Hoskins MH. Bradycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:996-1002.

Dangerous arrhythmia

- Dangerous arrhythmia as indicated by **1 or more** of the following(1)(2):
  - Heart rhythms that are inherently dangerous or unstable as indicated by **1 or more** of the following(3)(4)(5):
    - Resuscitated ventricular fibrillation or cardiac arrest
    - Ventricular escape rhythm
    - Sustained (30 seconds or more of ventricular rhythm at greater than 100 beats per minute) ventricular tachycardia
    - Nonsustained ventricular tachycardia and **1 or more** of the following:
      - Acute myocarditis
      - Myocardial ischemia
  - Unstable cardiac conduction defects as indicated by **1 or more** of the following(5)(6)(7):
    - Type II second-degree atrioventricular block
    - Third-degree atrioventricular block
    - New-onset left bundle branch block with suspected myocardial ischemia
  - Heart rhythms of concern due to **1 or more** of the following:
    - Hypotension
    - Respiratory distress
    - Association with other significant symptoms; examples include(8)(9)(10):
      - Bradycardia with dizziness or syncope
      - Supraventricular tachycardia with chest pain

References

1. Olgin JE, Zipes DP. Specific arrhythmias: diagnosis and treatment. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:748-97.

2. Van Hare GF. Disturbances of rate and rhythm of the heart. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:2250-61.
3. El-Chami M, Fernando L. Ventricular arrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1003-14.
4. Al-Khatib SM, et al. 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation 2017;Online. DOI: 10.1161/CIR.0000000000000549. (Reaffirmed 2017 Nov)
5. Epstein AE, et al. 2012 ACCF/AHA/HRS focused update incorporated into the ACCF/AHA/HRS 2008 guidelines for device-based therapy of cardiac rhythm abnormalities: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. Circulation 2013;127(3):e283-352. DOI: 10.1161/CIR.0b013e318276ce9b. (Reaffirmed 2017 May)
6. Miller JM, Zipes DP. Therapy for cardiac arrhythmias. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:685-720.
7. Park DS, Fishman GI. The cardiac conduction system. Circulation 2011;123(8):904-15. DOI: 10.1161/CIRCULATIONAHA.110.942284.
8. January CT, et al. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association task force on practice guidelines and the Heart Rhythm Society. Circulation 2014;130(23):e199-267. DOI: 10.1161/CIR.0000000000000041. (Reaffirmed 2017 Oct)
9. Chun EB, McGorisk GM. Supraventricular tachyarrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:980-95.
10. Westerman S, Manogue M, Hoskins MH. Bradycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:996-1002.

Dangerous arrhythmia absent

- Dangerous arrhythmia absent as indicated by absence of **ALL** of the following(1)(2)(3)(4)(5)(6)(7)(8)(9)(10):
  - Resuscitated ventricular fibrillation or cardiac arrest
  - Ventricular escape rhythm
  - Sustained (30 seconds or more of ventricular rhythm at greater than 100 beats per minute) ventricular tachycardia
  - Nonsustained ventricular tachycardia with myocarditis or ischemia
  - Type II second-degree atrioventricular block
  - Third-degree atrioventricular block
  - New-onset left bundle branch block with suspected myocardial ischemia
  - Heart rhythms of concern due to association with Hypotension, Respiratory distress, or other significant symptoms such as Bradycardia with syncope or Tachycardia with chest pain

References

1. Olgin JE, Zipes DP. Specific arrhythmias: diagnosis and treatment. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:748-97.
2. Van Hare GF. Disturbances of rate and rhythm of the heart. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:2250-61.
3. El-Chami M, Fernando L. Ventricular arrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1003-14.
4. Al-Khatib SM, et al. 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation 2017;Online. DOI: 10.1161/CIR.0000000000000549. (Reaffirmed 2017 Nov)
5. Epstein AE, et al. 2012 ACCF/AHA/HRS focused update incorporated into the ACCF/AHA/HRS 2008 guidelines for device-based therapy of cardiac rhythm abnormalities: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. Circulation 2013;127(3):e283-352. DOI: 10.1161/CIR.0b013e318276ce9b. (Reaffirmed 2017 May)
6. Miller JM, Zipes DP. Therapy for cardiac arrhythmias. In: Mann DL, Zipes DP, Libby P, Bonow RO, Braunwald E, editors. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. 10th ed. Philadelphia, PA: Elsevier Saunders; 2015:685-720.
7. Park DS, Fishman GI. The cardiac conduction system. Circulation 2011;123(8):904-15. DOI: 10.1161/CIRCULATIONAHA.110.942284.
8. January CT, et al. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association task force on practice guidelines and the Heart Rhythm Society. Circulation 2014;130(23):e199-267. DOI: 10.1161/CIR.0000000000000041. (Reaffirmed 2017 Oct)
9. Chun EB, McGorisk GM. Supraventricular tachyarrhythmias. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:980-95.
10. Westerman S, Manogue M, Hoskins MH. Bradycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:996-1002.

Hemodynamic instability

- Hemodynamic instability as indicated by **1 or more** of the following(1)(2)(3)(4)(5)(6)(7):
  - Vital sign abnormality not readily corrected by appropriate treatment within 12 to 24 hours as indicated by **1 or more** of the following:
    - Tachycardia that persists despite appropriate treatment (eg, volume repletion, treatment of pain, treatment of underlying cause)
    - Hypotension that persists despite appropriate treatment (eg, volume repletion, treatment of underlying cause)
    - Orthostatic vital sign changes that persist despite appropriate treatment (eg, volume repletion)
  - Vital sign abnormality that is severe as indicated by **1 or more** of the following:
    - Inadequate perfusion as indicated by **1 or more** of the following:
      - Lactate of 2.5 mmol/L (22.5 mg/dL) or more[A](8)(9)
      - Metabolic acidosis (arterial pH less than 7.35) not otherwise explained
      - New abnormal capillary refill (greater than 3 seconds)
      - Reduced urine output
      - Altered mental status
      - Myocardial ischemia

- Mean arterial pressure[B] less than 60 mm Hg
- IV inotropic or vasopressor medication required to maintain adequate blood pressure or perfusion

References

1. Puskarich MA, Jones AE. Shock. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:68-76.
2. Lewis J, Patel B. Shock. In: Gershel JC, Rauch DA, editors. Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics. 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2018:69-78.
3. Hochman JS, Ingbar DH. Cardiogenic shock and pulmonary edema. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1759-64.
4. Munford RS. Severe sepsis and septic shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1751-9.
5. 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):801-10. DOI: 10.1001/jama.2016.0287.
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8. Andersen LW, Mackenhauer J, Roberts JC, Berg KM, Cocchi MN, Donnino MW. Etiology and therapeutic approach to elevated lactate levels. Mayo Clinic Proceedings 2013;88(10):1127-40. DOI: 10.1016/j.mayocp.2013.06.012.
9. Kraut JA, Madias NE. Lactic acidosis. New England Journal of Medicine 2014;371(24):2309-19. DOI: 10.1056/NEJMra1309483.

Footnotes

A. There are numerous causes of an elevated lactate level. The most common are cardiogenic or hypovolemic shock, severe heart failure, severe trauma, or sepsis. However, there are also other etiologies to consider such as vigorous exercise, seizures, liver disease, or medication use (eg, metformin, beta2-agonists); therefore, interpretation of elevated lactate levels requires consideration of the clinical context (eg, well appearing post exercise vs hypotensive). The severity and persistence of the elevation can sometimes be helpful in this differentiation. In most instances of lactic acidosis, blood pH is less than 7.35, with a serum bicarbonate level 20 mEq/L (mmol/L) or lower. However, a coexisting respiratory or metabolic alkalosis can mask these findings.(8)(9)

B. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as mean arterial pressure (MAP) equals 1/3 SBP + 2/3 DBP.(1)(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)(3)(4)(5):
    - Tachycardia absent
    - Hypotension absent
    - No evidence of inadequate perfusion (eg, no myocardial ischemia)
    - No other hemodynamic abnormalities (eg, no Orthostatic vital sign changes)

References

1. Puskarich MA, Jones AE. Shock. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:68-76.
2. Lewis J, Patel B. Shock. In: Gershel JC, Rauch DA, editors. Caring for the Hospitalized Child: A Handbook of Inpatient Pediatrics. 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2018:69-78.
3. Hochman JS, Ingbar DH. Cardiogenic shock and pulmonary edema. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1759-64.
4. Munford RS. Severe sepsis and septic shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1751-9.
5. 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):801-10. DOI: 10.1001/jama.2016.0287.

Hypotension

- Hypotension as indicated by **ALL** of the following(1)(2)(3)(4):
  - Not patient baseline (eg, healthy adult with low SBP) or intentional therapeutic goal (eg, low SBP as treatment goal in heart failure)
  - Low blood pressure as indicated by **1 or more** of the following:
    - SBP less than 90 mm Hg in adult or child 10 years or older
    - Decrease in baseline SBP greater than 40 mm Hg in adult or child 10 years or older
    - Mean arterial pressure[A] less than 70 mm Hg in adult or child 10 years or older
    - Decrease in baseline mean arterial pressure[A] by 25% or more
    - SBP less than sum of 70 mm Hg plus twice patient's age in years in child 1 to 9 years of age
    - SBP less than 70 mm Hg in infant 1 to 11 months of age

References

1. Jones D, Di Francesco L. Hypotension. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:657-64.
2. Maier RV. Approach to the patient with shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1744-51.
3. Horeczko T, Inaba AS. Cardiac disorders. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:2099-125.

4. Huang MG, Santillanes G. General approach to the pediatric patient. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1985-93.

Footnotes

A. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as Mean Arterial Pressure (MAP) = 1/3 SBP + 2/3 DBP.

Hypotension absent

- Hypotension absent as indicated by **1 or more** of the following(1)(2)(3)(4):
  - SBP greater than or equal to 90 mm Hg and without recent decrease greater than 40 mm Hg from baseline in adult or child 10 years or older
  - Mean arterial pressure[A] greater than or equal to 70 mm Hg in adult or child 10 years or older
  - Mean arterial pressure[A] at patient's baseline (eg, healthy adult with low SBP), or at intentional therapeutic goal (eg, patient with heart failure)
  - SBP greater than or equal to sum of 70 mm Hg plus twice patient's age in years in child 1 to 9 years of age
  - SBP greater than or equal to 70 mm Hg in infant 1 to 11 months of age

References

1. Jones D, Di Francesco L. Hypotension. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:657-64.
2. Maier RV. Approach to the patient with shock. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1744-51.
3. Horeczko T, Inaba AS. Cardiac disorders. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:2099-125.
4. Huang MG, Santillanes G. General approach to the pediatric patient. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1985-93.

Footnotes

A. The mean arterial pressure takes into account both systolic and diastolic blood pressure readings and is calculated as Mean Arterial Pressure (MAP) = 1/3 SBP + 2/3 DBP.

Hypothermia

- Hypothermia indicated by core (eg, rectal) body temperature less than or equal to 95 degrees F (35 degrees C)(1)

References

1. Zafren K, Danzl DF. Accidental hypothermia. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:1743-54.

Hypoxemia

- Hypoxemia as indicated by **1 or more** of the following(1):
  - Previously normal respiratory status with **1 or more** of the following:
    - Arterial oxygen saturation (SaO_2) less than 90% or arterial partial pressure of oxygen (PO_2) less than 60 mm Hg (8.0 kPa) on room air[A]
    - Oxygen required to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa) (ie, saturation below 90% on room air)
  - Chronic lung disease with **1 or more** of the following(2):
    - New requirement for supplemental oxygen to keep SaO_2 at baseline or acceptable level
    - Required supplemental oxygen performable only in acute inpatient setting

References

1. Dezube R, Lechtzin N. Hypoxia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:669-75.
2. Staton GW, Ochoa CD. Chronic obstructive pulmonary disease. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:1887-87.

Footnotes

A. Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude.(1)

Hypoxemia absent

- Hypoxemia absent as indicated by absence of **ALL** of the following(1):
  - New SaO_2 less than 90% or PO_2 less than 60 mm Hg (8.0 kPa) on room air[A]
  - New oxygen requirement to keep SaO_2 greater than 90% or PO_2 greater than 60 mm Hg (8.0 kPa)
  - Chronic lung disease with new requirement for supplemental oxygen that is needed to keep SaO_2 at baseline or acceptable level, or is only performable in acute inpatient setting

References

1. Dezube R, Lechtzin N. Hypoxia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:669-75.

Footnotes

A. Specific target values (ie, 90% or 60 mm Hg (8.0 kPa)) may require adjustment when care is delivered at high altitude.(1)

Orthostatic vital sign changes

- Orthostatic vital sign changes as indicated by **1 or more** of the following(1)(2):
  - 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):317-24. DOI: 10.1016/j.jash.2013.04.006. (Reaffirmed 2017 May)
2. Whelton PK, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Journal of the American College of Cardiology 2017;Online. DOI: 10.1016/j.jacc.2017.11.006.

Reduced urine output

- Reduced urine output as indicated by **1 or more** of the following(1)(2):
  - Urine output less than 0.5 mL/kg/hour for 6 hours in adult
  - Anuria (urine output less than 0.1 mL/kg/hour) for 4 hours in any age group
  - Reduced output in child as indicated by **1 or more** of the following(3):
    - Urine output less than 2 mL/kg/hour for 6 hours in infant younger than 2 years
    - Urine output less than 1 mL/kg/hour for 6 hours in child younger than 12 years
    - Urine output less than 0.75 mL/kg/hour for 6 hours in adolescent younger than 18 years

References

1. Acute kidney injury: prevention, detection and management of acute kidney injury up to the point of renal replacement therapy. NICE clinical guidance CG169 [Internet] National Institute for Health and Care Excellence. 2013 Aug (NICE reviewed 2017) Accessed at: http://www.nice.org.uk/guidance. [accessed 2017 Sep 19]
2. Kidney Disease: Improving Global Outcomes (KDIGO) Acute Kidney Injury Work Group. KDIGO clinical practice guideline for acute kidney injury. Kidney International. Supplement 2012;2(1):1-138. (Reaffirmed 2017 May)
3. Sreedharan R, Avner ED. Renal failure. In: Kliegman RM, Stanton BF, St Geme JW III, Schor NF, Behrman RE, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia, PA: Elsevier; 2016:2539-47.

Respiratory distress

- Respiratory distress as indicated by **ALL** of the following(1)(2):
  - Patient with **1 or more** of the following:
    - Dyspnea (difficulty breathing)
    - Tachypnea
    - Abnormal breathing pattern (eg, chest retractions)
    - Other evidence of difficulty breathing
  - Evidence of respiratory compromise as indicated by **1 or more** of the following:
    - Hypoxemia
    - Altered mental status
    - Other evidence of respiratory compromise (eg, pulmonary edema on chest x-ray)

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Naureckas ET, Solway J. Disturbances of respiratory function. In: Kasper DL, Hauser SL, Jameson JL, Fauci AS, Longo DL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 19th ed. New York, NY: McGraw Hill Education; 2015:1663.

Tachycardia

- Tachycardia as indicated by **1 or more** of the following(1)(2):
  - Heart rate greater than 100 beats per minute in adult or child age 6 years or older
  - Heart rate greater than 115 beats per minute in child 3 to 5 years of age
  - Heart rate greater than 125 beats per minute in child 1 or 2 years of age
  - Heart rate greater than 130 beats per minute in infant 6 to 11 months of age
  - Heart rate greater than 150 beats per minute in infant 3 to 5 months of age
  - Heart rate greater than 160 beats per minute in infant 1 or 2 months of age

References

1. Southmayd GL. Tachycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:729-39.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachycardia absent

- Tachycardia absent as indicated by **1 or more** of the following(1)(2):
  - Heart rate less than or equal to 100 beats per minute in adult or child 6 years or older
  - Heart rate less than or equal to 115 beats per minute in child 3 to 5 years of age
  - Heart rate less than or equal to 125 beats per minute in child 1 or 2 years of age
  - Heart rate less than or equal to 130 beats per minute in infant 6 to 11 months of age
  - Heart rate less than or equal to 150 beats per minute in infant 3 to 5 months of age
  - Heart rate less than or equal to 160 beats per minute in infant 1 or 2 months of age

References

1. Southmayd GL. Tachycardia. In: McKean SC, Ross JJ, Dressler DD, Scheurer DB, editors. Principles and Practice of Hospital Medicine. 2nd ed. New York, NY: McGraw-Hill Education; 2017:729-39.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachypnea

- Tachypnea as indicated by respiratory rate of **1 or more** of the following(1)(2):
  - Greater than 18 breaths per minute in adult or child age 12 years or older
  - Greater than 22 breaths per minute in child 6 to 11 years of age
  - Greater than 25 breaths per minute in child 3 to 5 years of age
  - Greater than 30 breaths per minute in child 1 or 2 years of age
  - Greater than 40 breaths per minute in infant 6 to 11 months of age
  - Greater than 45 breaths per minute in infant 3 to 5 months of age
  - Greater than 60 breaths per minute in infant 1 or 2 months of age

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Tachypnea absent

- Tachypnea absent as indicated by respiratory rate of **1 or more** of the following(1)(2):
  - Less than or equal to 18 breaths per minute in adult or child 12 years of age or older
  - Less than or equal to 22 breaths per minute in child 6 to 11 years of age
  - Less than or equal to 25 breaths per minute in child 3 to 5 years of age
  - Less than or equal to 30 breaths per minute in child 1 or 2 years of age
  - Less than or equal to 40 breaths per minute in infant 6 to 11 months of age
  - Less than or equal to 45 breaths per minute in infant 3 to 5 months of age
  - Less than or equal to 60 breaths per minute in infant 1 or 2 months of age

References

1. Braithwaite SA, Perina D. Dyspnea. In: Walls RM, et al., editors. Rosen's Emergency Medicine. 9th ed. Philadelphia, PA: Elsevier; 2018:195-203.
2. Pediatric parameters, equipment, and resuscitation medications. In: Hughes HK, Kahl LK, editors. The Harriet Lane Handbook: A Manual for Pediatric House Officers. 21st ed. Philadelphia, PA: Elsevier; 2018:frontpiece tables.

Vital sign abnormality

- Vital sign abnormality as indicated by **ALL** of the following:
  - Vital sign findings not as expected for chronic patient condition or baseline (eg, intentionally low blood pressure in heart failure)
  - Vital sign abnormality as indicated by **1 or more** of the following:
    - Tachycardia
    - Hypotension
    - Orthostatic vital sign changes

Codes

ICD-10 Diagnosis: E66.01, E66.2

ICD-10 Procedure: 0DV64CZ, 0DW64CZ

CPT®: 43770, 43842

Last Update: 5/14/2018 10:19:33 PM
Build Number: 22.1.102576.004582

Prior Authorization Request Telephone Line: 1-408-874-1821
Prior Authorization Request Fax Line: 1-408-874-1957 or 1-408-376-3548
Other Contact Information:
- Eligibility: 1-800-720-3455
- Customer Service: 1-800-260-2055
- Provider Services: 1-408-874-1788

Note: *When faxing a request, please use SCFHP Prior Authorization Request – Medical Services form found at www.scfhp.com, attach pertinent medical records, treatment plans, test results, and evidence of conservative treatment to support medical necessity. This Prior Authorization Grid contains services that require prior authorization only and is not intended to be a list of covered services. Providers should refer to an enrollee's Evidence of Coverage (EOC) for a complete list of covered services.*

For dental care for Medi-Cal members, please contact Denti-Cal at 1-800-322-6384

For dental care for Healthy Kids members, please contact Liberty Dental at 1-888-902-0403

For vision care, please contact VSP at 1-844-613-4479

Non-Contracted Provider	• ALL SERVICES •
Inpatient Admissions, Services and Therapy	• All elective medical and surgical inpatient admissions • Acute hospital (including psychiatric) • Acute rehabilitation facilities • Long Term Acute Care (LTAC) • Partial hospital psychiatric treatment, substance use disorder including detoxification • Skilled Nursing Facilities (SNF) - Skilled, custodial and long-term care
Outpatient Procedures/Surgery	• Abdominoplasty/Panniculectomy • Bariatric procedure • Breast reduction, augmentation and reconstructive surgery • Cataract surgery • Cochlear auditory implant • Dental surgery, jaw surgery and orthognathic procedures including TMJ treatment) • Dermatology procedures: Laser treatment, skin injections and implants • Endoscopy, esophagogastroduodenoscopy (EGD) • Experimental/investigational procedures/services and new technologies • Gender reassignment surgery • Neuro and spinal cord stimulator • Plastic surgery reconstructive procedures, including Blepharoplasty, Rhinoplasty, Tracheoplasty • Podiatric procedures and surgery • Spinal procedures, except epidural injections • Surgery for obstructive sleep apnea • Varicose vein treatment

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Durable Medical Equipment (DME)	**Medi-Cal and Healthy Kids:** **Most DME is capitated to CHME including the following: FAX to 650-931-8928** • Enteral nutrition • Incontinence supplies • Home medical equipment: walkers, wheelchairs, commodes • Mobility devices including motorized wheelchairs and scooters • Respiratory: Oxygen, BIPAP, CPAP, ventilators
	Cal MediConnect: • Custom made items • Any other DME or medical supply item exceeding $1000 allowable • Prosthetics & customized orthotics exceeding $1000 allowable •
	Specialty DME: PAR should be submitted to SCFHP, including: • Prosthetics and orthotics • Hearing aids • Other specialty devices
Outpatient Services	• • Genetic testing and counseling • Hyperbaric oxygen therapy • Radiation therapy: Intensity modulated radiation therapy (IMRT), proton beam therapy, stereotactic radiation treatment (SBRT), proton beam therapy • Outpatient diagnostic imaging: Magnetic resonance imaging (MRI), magnetic resonance angiography (MRA), nuclear cardiology procedures (including SPECT), positron-emission tomography (PET/PET-CT), • Outpatient physical/occupational/speech therapy (PT/OT/ST) • Sleep studies • Transplant-related services (EXCEPT Cornea transplant): prior to surgery • Unclassified Procedures
Home Health	• All home health services • Home IV infusion services
	•

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Prosthetics and orthotics¶
Hearing aids¶
Other specialty devices

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EEG, EMG, NCV¶

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Transportation	• Non-Emergency Medical Transportation for ground and air except ground transportation from facility to facility and hospital to home. • Schedule routine non-emergency medical transportation in area through SCFHP Customer Service at 1-800-260-2055
Organ Transplant	• All Organ Transplants •
Medi-Cal only benefit	• Intensive Outpatient Palliative Care (IOPC) • Hearing Aids *see DME • Behavioral Health Treatment (BHT)*see BHT • Community Based Adult Services (CBAS) *see MLTSS • Long Term Case *see MLTSS
Behavioral Health Treatment (Autism)	• Behavioral Health Treatment
Long-Term Services and Supports (LTSS)	• Community-Based Adult Services (CBAS) • Long Term Care •
Medication	• Refer to the 2019 Medical Benefit Drug Prior Authorization Grid • Drugs administered in the Doctor's office or in an outpatient setting

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Other organs transplant: Contact SCFHP for enrollment in FFS Medi-Cal

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Mental Health Services: No PAR. Specialty MH services authorized by County Behavioral Services Department 1-800-704-0900¶
Substance Abuse Treatment: No PAR for SBIRT, all other are provided through the County Gateway access 1-800-488-9419

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Deleted: <#>Multipurpose Senior Services Program (MSSP): No PAR, authorized by Sourcewise¶
Fax Referrals to: 1-408-289-1880¶
Referral to SCFHP MLTSS Team for timely LTSS access 1-408-874-1808

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for Medi-Cal and Healthy Kids¶
2018¶
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Santa Clara Family Health Plan™

2019 Medical Benefit Drug Prior Authorization Grid
For Medi-Cal, Cal MediConnect and Healthy Kids

Medications may be subjected to Step Therapy

Brand	Generic
ANTIEMETICS (ASSOCIATED WITH CANCER CHEMOTHERAPY)	
Aloxi	Palonosetron
Emend	Aprepitant
Emend IV	Fosaprepitant
ANTIHEMOPHELIC AGENT	
Hemlibra	Emicizumab-kxwh
CAR-T CELL IMMUNOTHERAPY	
Yescarta	Axicabtagene ciloleucel
Kymriah	Tisagenlec-leucel-T
STIMULANTING FACTORS	
Aranesp	Darbepoetin alfa
Epogen, Procrit	Epoetin alfa
Retacrit	Epoetin alfa-epbx
Neulasta, Neulasta Onpro	Pegfilgrastim
Fulphila	Pegfilgrastim-jmdb
Neupogen	Filgrastim
Zarxio, Nivestym	Filgrastim-sndz, filgrastim-aafi
Granix	Tbo-Filgrastim
GAUCHER'S DISEASE	
Cerezyme	Imiglucerase
Elelyso	Taliglucerase
Vpriv	Velaglucerase
GENE THERAPY	
Luxturna	Voretigene neparvovec
HEREDITARY ANGIOEDEMA	
Berinert, Cinryze, Haegarda, Ruconest	C-1 esterase inhibitor
Kalbitor	Ecallantide
Firazyr	Icatibant
Takhzyro	Lanadelumab-flyo
IV IMMUNOGLOBULIN (IVIG)	
Baygam, Flebogamma, Flebogamma DIF, Gamastan, Gammagard, Gammaplex, Gamunex, Gamunex-C, Gammaked, Hizentra, Octagam, Privigen, Vivaglobin, Carimune, Hyqvia, Cuvitru, Bivigam	Immune globulin, Immune globulin lyophilized, Immune globulin non-lyophilized

MULTIPLE SCLEROSIS	
Tysabri	Natalizumab
Ocrevus	Ocrelizumab
NEUROMUSCULAR BLOCKING AGENTS	
Botox	OnabotulinumtoxinA
Dysport	AbobotulinumtoxinA
Myobloc	RimabotulinumtoxinB
Xeomin	IncobotulinumtoxinA
OPHTHALMIC AGENTS	
Eylea	Aflibercept
Lucentis	Ranibizumab
OSTEOPOROSIS OR BONE MODIFIERS	
Aredia	Pamidronate
Prolia, Xgeva	Denosumab
Reclast, Zometa	Zoledronic acid
Boniva	Ibandronate sodium
PULMONARY HYPERTENSION	
Flolan Veletri	Epoprostenol
Remodulin	Treprostinil
RESPIRATORY	
Aralast, Aralast NP, Glassia, Prolastin, Prolastin C, Zemaira	α-1 proteinase inhibitor
Cinqair	Reslizumab
Nucala	Mepolizumab
Xolair	Omalizumab
Synagis	Palivizumab
RHEUMATOLOGY/IMMUNOSUPPRESSANTS	
Actemra	Tocilizumab
Orencia	Abatacept
Remicade	Infliximab
Inflectra, Renflexis	Infliximab-dyyb, infliximab-abda
Stelara	Ustekinumab
Humira	Adalimumab
Cyltezo, Amjevita	Adalimumab-adbm, adalimumab-atto
Enbrel	Etanercept
Erelzi	Etanercept-szzs
Cimzia	Certolizumab pegol
Tremfya	Guselkumab
Simponi Aria	Golimumab
Entyvio	Vedolizumab
MISCELLANEOUS	
Nplate	Romiplostim
Spinraza	Nusinersen

Krystexxa	Pegloticase
Exondys 51	Eteplirsen
Onpattro	Patisiran

C9399 (Unclassified drug/biologics), J8499 (Prescription drug), J3590 (Unclassified biologics), J3490 (Unclassified drugs)

Utilization Management Program Evaluation

CY 2017

Santa Clara Family Health Plan evaluates its Utilization Management (UM) Program annually to determine their overall effectiveness, identify needed improvements, and assess progress toward improvement of annual goals. The annual evaluation is also used to identify goals, trends, work plan activities, and opportunities for improvement in the coming year.

Program Structure

SCFHP has a UM Program that objectively monitors and evaluates appropriate UM services delivered to members which operates with the principles outlined in the program.

UM is governed by a Board of Supervisors and Board of Directors that is responsible for approving Quality Improvement (QI) and UM programs. The Board of Directors delegates oversight of Quality and Utilization Management functions to the SCFHP Chief Medical Officer (CMO) and the Quality Improvement Committee (QIC) and provides the authority, direction, guidance, and resources to enable SCFHP staff to carry out the Utilization Management Program. Utilization Management oversight is the responsibility of the Utilization Review Committee (UMC) which is composed of voting and non voting members which are professionals in manage health care industry as well as Medical Doctors with different specialty practices including behavioral health. Utilization Management activities are the responsibility of the SCFHP staff under the direction of the Chief Medical Officer. The Board of Directors appoints and oversees the QIC, which, in turn, provides the authority, direction, guidance, and resources to the Utilization Management Committee (UMC) to enable SCFHP staff to carry out the Quality Improvement and Utilization Management Programs.

SCFHP UMC meets quarterly in accordance with the SCFHP bylaws and more frequently when needed. Committee meeting minutes are maintained summarizing committee activities and decisions, and are signed and dated. The QIC Committee provides oversight, direction and makes recommendations, final approval of the UM Program.

In CY 2017, the UM committee which includes the Senior Level Medical Director, met 4 times in a quarterly basis and 1 ad hoc meeting in March 2017. UMC reviews, approves and provides appropriate feedback to the following: UM program description, UM Evaluation, UM policies, care coordinator guidelines which is approved by the UMC, plan membership, UM data reports that are outlined in the UM work plan, UM Prior authorization grid, Inter rater reliability (IRR) test results, Quality monitoring, and the nurse advice line.

QIC met 4 times and have reviewed and approved UMC minutes.

QIC Meetings 2017	UMC meetings 2017
2/8/2017	1/18/2018
5/10/2017	*3/22/2018
8/9/2017	4/19/2018
11/8/2018	7/19/2018
	10/18/2018
*ad hoc	

Program Scope

The UM Program consists of comprehensive and systematic functions, services, and processes that provide care management to members, and include medical necessity determinations regarding the appropriateness of health care services in accordance with definitions contained in the member certificate of coverage.

UM has policies and procedure to reflect decisions based on adoption of medical criteria and medical necessity based on medical information to meet timeliness as required by regulatory bodies.

SCFHP monitors Quality of clinical care by reviewing inpatient admissions against MCG inpatient GLOS attainment and national benchmarks for all lines of business. Wherein Inpatient utilization comparison specific to Admits per 1000, Average length of stay and bed days per 1000 shows that we are compared to MCG's Inpatient Care Utilization model reflecting a loosely managed plan. Readmission rates were also monitored and found that CMC line of business was at >25th percentile compared to NCQA Medicare benchmarks.

In addition, the UM program description was adopted with the expansion of TOC and case management programs.

The Medical necessity criteria was updated to use MCG as primary criteria across the board reflected in Procedure HS.02.01 Application of Clinical Criteria .

Quality of service areas are monitored by the Medical Director and Behavioral Health Director by reviewing the standards for medical necessity decision timeliness which were met 94% of the time for CalMediconnect, 100% for Healthy Kids and 91% of the time for Medi-Cal for the CY 2017.

Medi-Cal Behavioral Health Metrics ADHD Medicaid Percentile Rank is 25 to 50th percent.

An Inter Rater Reliability (IRR) test was administered bi-annually to assess the consistency of application of clinical criteria to approvals and denials of services. All UM staff are evaluated for several elements which include: 1. Do the staff know the line of business and turnaround times for those lines of business, 2. Can the staff identify the member, demographics, type of authorization and TAT applicable to that type, 3. For non-clinical staff, do they know how to apply the Care Coordinator Guidelines, and 4. Do the clinical staff know how to apply the appropriate

guidelines (includes nursing and physicians, and behavioral health practitioners). Non clinical, clinical staff in both behavioral health and medical services completed all IRR testing (pharmacy IRR is presented in the pharmacy meetings). Findings for the 1st testing of 2017 reflected that all staff were 100% proficient, while 37% were found non-proficient in the 2nd testing session of 2017 and remediation efforts included comprehensive retraining for the deficient areas.
The continuity and coordination of care were reviewed and assessed which resulted the expansion of the TOC and case management program with the UM goals.

The 2017 UM program evaluation resulted in program changes. The UM program and UM policies were described to have it available for members and providers, the UM staff description was updated as staffing changes and expansion were implemented in mid 2017, Practitioner and member satisfaction monitoring were included, and Behavioral Health staff involvement was defined.
These changes are outlined in the 2018 Program description. They are made to meet regulatory requirement and to ensure effectiveness of the program structure.

Goals for 2018:
UM continues to strive to meet regulatory requirements that are written in the 2018 UM Program description and to meet goals described in the 2018 UM work plan (see attached).

Santa Clara Family Health Plan Membership Report

	2018-07	2018-08	2018-09	2018-10
HK	**3,278**	**3,187**	**3,163**	**3,217**
Palo Alto Medical Foundation	94	92	99	97
Physicians Medical Group	1,138	1,111	1,124	1,144
Premier Care	230	230	235	234
Independent Physicians	365	368	331	338
VHP Network	1,451	1,386	1,374	1,404
MC	**247,755**	**245,954**	**245,884**	**244,493**
Kaiser Permanente	25,939	25,926	25,925	25,801
Medicare Primary	13,814	13,847	13,870	13,931
Palo Alto Medical Foundation	7,265	7,241	7,176	7,133
Physicians Medical Group	45,481	44,905	44,979	44,553
Premier Care	15,570	15,487	15,251	15,176
Independent Physicians	15,739	16,138	15,831	15,776
VHP Network	123,947	122,410	122,852	122,123
CMC	**7,523**	**7,540**	**7,600**	**7,601**
Santa Clara Family Health Plan	7,523	7,540	7,600	7,601
Grand Total	**258,556**	**256,681**	**256,647**	**255,311**

Santa Clara Family Health Plan

Cal MediConnect Operations Dashboard -

12

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		2017				
	Goal	YTD	Jul	Aug	Sept	YTD
UTILIZATION MANAGEMENT						
Pre-Service Organization Determinations - HS Combined						
Standard Part C						
# of Prior Authorization Requests Received		**2,748**	487	472	444	**1,403**
# of Prior Auth Requests Completed within 14 days		**2,698**	484	470	442	**1,396**
% of Timely Decisions made within 14 days	100%	**98.2%**	99.4%	99.6%	99.5%	**99.5%**
# Approved		**2,552**	447	451	431	**1,329**
# Denied		**210**	40	23	13	**76**
% Approved		**92.9%**	91.8%	95.6%	97.1%	**94.7%**
# of Prior Authorization Notification Sent		**unavailable**	487	472	444	**1,403**
# of Prior Authorization Notification Sent Within 14 Days		**unavailable**	483	470	433	**1,386**
% Timely Notification of HS decision		**unavailable**	99.2%	99.6%	97.5%	**98.8%**
Expedited Part C						
# of Prior Authorization Requests Received		**1,565**	194	228	203	**625**
# of Prior Auth Requests Completed within 72 Hours		**1,506**	193	226	198	**617**
% of Timely Decisions made within 72 Hours	100%	**96.2%**	99.5%	99.1%	97.5%	**98.7%**
# of Requests with Extensions		**unavailable**	unavailable	unavailable	unavailable	**unavailable**
# Approved		**1,442**	179	217	185	**581**
# Denied		**126**	15	13	18	**46**
% Approved		**92.1%**	92.3%	95.2%	91.1%	**93.0%**
# of Prior Authorization Notification Sent		**unavailable**	194	225	203	**622**
# of Prior Authorization Notification Sent Within 72 hours		**unavailable**	188	220	194	**602**
% timely notification of HS decision		**unavailable**	96.9%	97.8%	95.6%	**96.8%**
Urgent Urgent Concurrent Organization Determinations						
# of Urgent Concurrent Requests Received		**2,294**	4	12	24	**40**
# of Urgent Concurrent Requests Completed within 24 Hours		**1,996**	4	4	19	**27**
% of Timely Decisions made within 24 Hours	100%	**87.0%**	100.0%	33.3%	79.2%	**67.5%**
# Approved		**2,291**	4	12	23	**39**
# Denied		**3**	4	0	1	**5**
% Approved		**99.9%**	100.0%	100.0%	95.8%	**97.5%**
# of Prior Authorization Notification Sent		**unavailable**	4	12	24	**40**
# of Prior Authorization Notification Sent Within 24 hours		**unavailable**	4	8	16	**28**
% timely notification of HS decision		**unavailable**	100.0%	66.7%	66.7%	**70.0%**
Post Service Organization Determinations						
# of Requests Received		**269**	23	30	41	**94**
# of Post Service Requests Completed within 30 Days		**266**	23	27	41	**91**
% of Timely Decisions made within 30 days	100%	**98.9%**	100.0%	90.0%	100.0%	**96.8%**
# of Requests with Extensions		**unavailable**	unavailable	unavailable	unavailable	**unavailable**
# Approved		**261**	22	30	41	**93**
# Denied		**6**	1	0	0	**1**
% Approved		**97.0%**	95.7%	100.0%	100.0%	**98.9%**
# of Prior Authorization Notification Sent		**unavailable**	23	27	41	**91**
# of Prior Authorization Notification Sent Within 30 Days		**unavailable**	23	24	41	**88**
% timely notification of HS decision		**unavailable**	100.0%	88.9%	100.0%	**96.7%**

Santa Clara Family Health Plan 12 9

Medi-Cal Operations Dashboard -

	2017				
	YTD	Jul	Aug	Sept	YTD
HEALTH SERVICES					
Medical Authorizations - HS Combined					
Routine Authorizations					
# of Routine Prior Authorization Requests Received	**9,325**	1,087	1,113	841	**3,041**
# of Routine Prior Authorization Requests Completed within 5 Business Days	**8,985**	1,075	1,102	825	**3,002**
% of Timely Decisions made within 5 Business Days of request	**96.4%**	98.9%	99.0%	98.1%	**98.7%**
# of Prior Authorization Notification Sent	**unavailable**	1,087	1,113	841	**3,041**
# of Prior Authorization Notification Sent Within 5 Business Days	**unavailable**	1,056	1,095	825	**2,976**
% timely notification of HS decision	**unavailable**	97.1%	98.4%	98.1%	**97.9%**
Expedited Authorizations					
# of Expedited Prior Authorization Requests Received	**2,013**	152	205	155	**512**
# of Expedited Prior Authorization Requests Completed within 72 Hours	**1,921**	152	202	155	**509**
% of Timely Decisions made within 72 Hours of request	**95.4%**	100.0%	98.5%	100.0%	**99.4%**
# of Prior Authorization Notification Sent	**unavailable**	152	205	155	**512**
# of Prior Authorization Notification Sent Within 72 hours	**unavailable**	151	202	151	**504**
% timely notification of HS decision	**unavailable**	99.3%	98.5%	97.4%	**98.4%**
Urgent Concurrent Review					
# of Urgent Concurrent Requests Received	**4,129**	13	16	4	**33**
# of Urgent Concurrent Requests Completed within 24 Hours of request	**1,281**	13	15	4	**32**
% of Timely Decisions made within 24 Hours of request	**78.7%**	100.0%	93.8%	100.0%	**97.0%**
# of Prior Authorization Notification Sent	**unavailable**	13	16	4	**33**
# of Prior Authorization Notification Sent Within 24 hours	**unavailable**	13	15	4	**32**
% timely notification of HS decision	**unavailable**	100.0%	93.8%	100.0%	**97.0%**
Retrospective Review					
# of Retrospective Requests Received	**631**	114	181	256	**551**
# of Retrospective Requests completed within 30 Calendar Days of request	**620**	114	178	255	**547**
% of Retrospective Reviews completed within 30 Calendar Days of request	**98.3%**	100.0%	98.3%	99.6%	**99.3%**
# of Prior Authorization Notification Sent	**unavailable**	114	181	256	**551**
# of Prior Authorization Notification Sent Within 30 Calendar days	**unavailable**	110	179	252	**541**
% timely notification of HS decision	**unavailable**	96.5%	98.9%	98.4%	**98.2%**
Denied Authorizations (Routine, Expedited, CCR, Retro)					
Total Requests Approved	**12,917**	1306	1434	1256	**3,996**
Total Requests Denied	**865**	60	81	57	**198**
Total Requests Pended/Extended	**48**	unavailable	unavailable	0	-
Total Requests Cancelled	**785**	unavailable	unavailable	0	-
% of Total Requests Denied	**6.3%**	4.4%	5.3%	4.5%	**4.8%**

Santa Clara Family Health Plan™

Utilization Management Committee (UMC)

October 2018

UMC Goals and Objectives

- Compare SCFHP utilization levels against relevant industry benchmarks and monitor utilization trends among SCFHP membership over time
- Analyze key drivers and potential barriers, prioritize opportunities for improvement, and develop interventions that promote high-quality and cost-effective use of medical services

Inpatient Utilization: Medi-Cal – Non-SPD 7/1/2017 – 6/30/2018

Source: HEDIS Inpatient Utilization (IPU) data for measurement year ending 6/30/2018

Quarter	Discharges	Discharges / 1,000 Member Months	Days	Average Length of Stay
2017 Q3	2,400	3.71	8,215	3.42
2017 Q4	2,325	3.64	8,354	3.59
2018 Q1	2,429	3.89	8,750	3.60
2018 Q2	2,134	3.47	7,684	3.60
Total	9,288	3.68	33,003	3.55

Inpatient Utilization: Medi-Cal – SPD 7/1/2017 – 6/30/2018

Source: HEDIS Inpatient Utilization (IPU) data for measurement year ending 6/30/2018

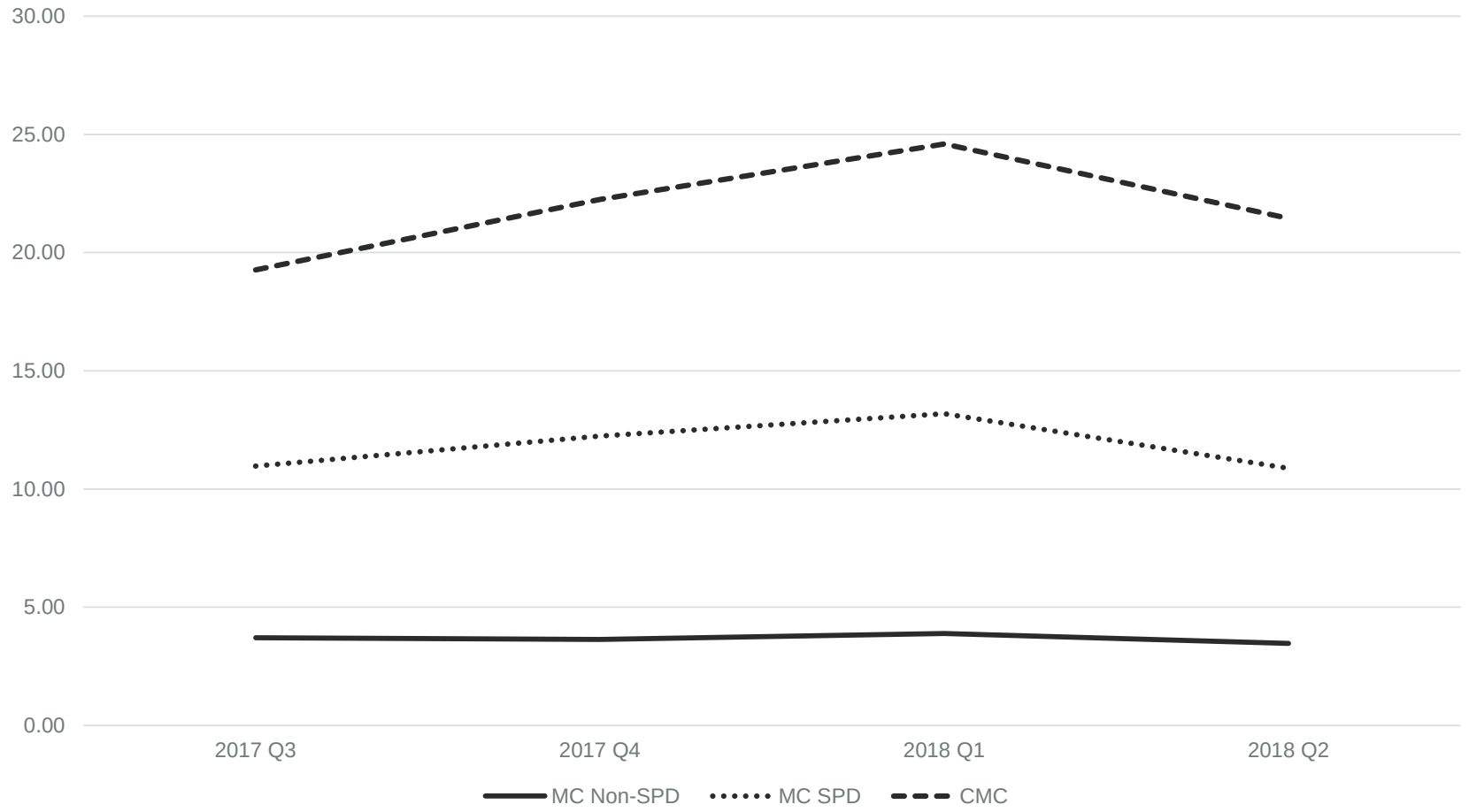
Quarter	Discharges	Discharges / 1,000 Member Months	Days	Average Length of Stay
2017 Q3	726	10.97	3,489	4.81
2017 Q4	811	12.24	4,073	5.02
2018 Q1	875	13.18	4,092	4.68
2018 Q2	722	10.88	3,488	4.83
Total	3,134	11.82	15,142	4.83

Inpatient Utilization: Cal MediConnect (CMC) 7/1/2017 – 6/30/2018

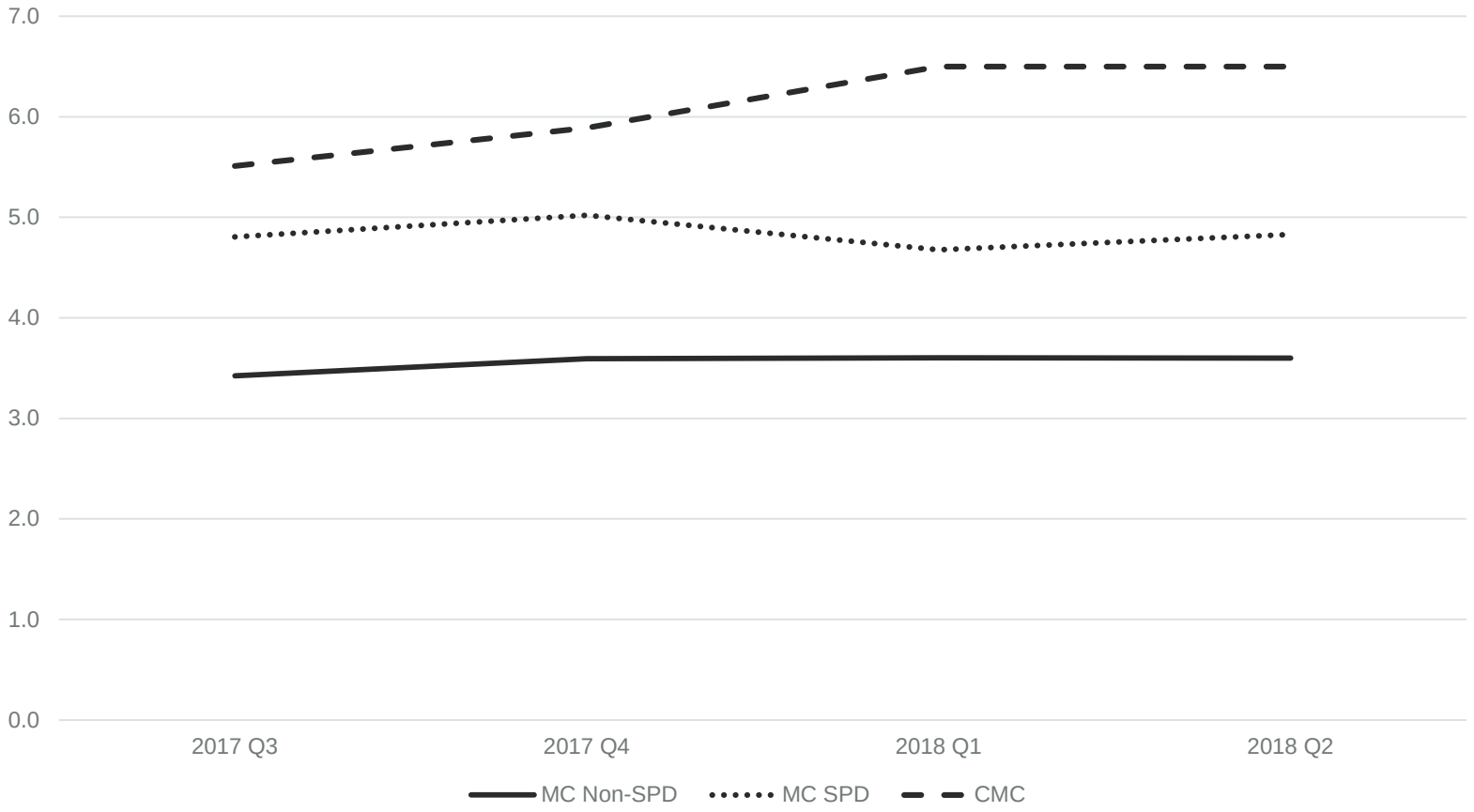
Source: CMC Enrollment & QNXT Claims Data

Quarter	Discharges	Discharges / 1,000 Members per Year	Days	Average Length of Stay
2017 Q3	424	231.2	2,337	5.51
2017 Q4	491	267.1	2,894	5.89
2018 Q1	545	295.1	3,543	6.5
2018 Q2	479	257.4	3,064	6.4
Total	1,939	267.7	11,838	6.11

SCFHP Medi-Cal & Cal MediConnect
Acute Inpatient Discharges per 1,000 Member Months (MM)
7/1/2017 – 6/30/2018



SCFHP Medi-Cal & Cal MediConnect
Acute Inpatient Average Length of Stay (ALOS)
7/1/2017 – 6/30/2018



Medi-Cal Inpatient Utilization NCQA Medicaid Benchmark Comparisons 7/1/2017 – 6/30/2018

	Medi-Cal Population		
Measure	**Non-SPD**	**SPD**	**Total**
Discharges / 1,000 Member Months	3.67	11.82	4.45
NCQA Medicaid Percentile Rank[1]	<10th	>90th	<10th
ALOS	3.55	4.83	3.88
NCQA Medicaid Percentile Rank[2]	<25th	>75th	<50th

[1] NCQA Medicaid 50th percentile = 6.54
[2] NCQA Medicaid 50th percentile = 4.18

Medi-Cal SPD & CMC Inpatient Utilization
MCG & NCQA Medicare Benchmark Comparisons
7/1/2017 – 6/30/2018

	Discharges / 1,000 Members per Year	Days / 1,000 Members per Year	ALOS
SCFHP Population			
Medi-Cal SPD	141.9	685.29	4.83
CMC	262.7	1,604.01	6.11
MCG Medicare Plans			
Loosely Managed	258.7	1,406.9	5.44
Moderately Managed	214.8	1,078.7	5.02
Well Managed	171.0	750.6	4.39
NCQA Medicare Mean	214.6	1,208.9	5.41

Inpatient Readmissions: Medi-Cal – Non-SPD

Source: HEDIS All Cause Readmissions (ACR) data for 7/1/2017 – 6/30/2018 measurement period

Quarter	Count of Index Stays (Denominator)	Count of 30-Day Readmissions (Numerator)	Actual Readmission Rate[1, 2]
2017 Q3	1,179	175	14.84%
2017 Q4	1,163	183	15.74%
2018 Q1	1,162	178	15.32%
2018 Q2	754	127	16.84%
Total	4,258	663	15.57%

[1] A lower rate indicates better performance.
[2] The 30-day readmission rate for the ACR measure is Medi-Cal specific and only includes non-dual members ages 21 years and older.

Inpatient Readmissions: Medi-Cal – SPD

Source: HEDIS All Cause Readmissions (ACR) data for 7/1/2017 – 6/30/2018 measurement period

Quarter	Count of Index Stays (Denominator)	Count of 30-Day Readmissions (Numerator)	Actual Readmission Rate[1,2]
2017 Q3	605	109	18.02%
2017 Q4	655	149	22.75%
2018 Q1	724	163	22.51%
2018 Q2	388	94	24.23%
Total	2,372	515	21.71%

[1] A lower rate indicates better performance.
[2] The 30-day readmission rate for the ACR measure is Medi-Cal specific and only includes non-dual members ages 21 years and older.

Inpatient Readmissions: Cal MediConnect (CMC)

Source: HEDIS Plan All-Cause Readmissions (PCR) data for 7/1/2017– 6/30/2018 measurement period

Quarter	Count of Index Stays (Denominator)	Count of 30-Day Readmissions (Numerator)	Actual Readmission Rate[1, 2]
2017 Q3	281	40	14.2%
2017 Q4	353	63	17.9%
2018 Q1	370	58	15.7%
2018 Q2	261	42	16.1%
Total	1,265	203	16.5%

[1] A lower rate indicates better performance.
[2] The PCR rate applies only to SCFHP's CMC line of business and includes members 18 years of age and older.

Cal MediConnect (CMC) Readmission Rates Compared to NCQA Medicare Benchmarks

Source: HEDIS Plan All-Cause Readmissions (PCR) data for 7/1/2017 – 6/30/2018 measurement period

Rate Description	Ages 18 – 64 (PCR-A)	Ages 65+ (PCR-B)
Count of Index Hospital Stays	304	961
Count of 30-Day Readmissions	73	130
Actual Readmission Rate	24.01%	13.52%
NCQA Medicare 50th Percentile	16.34%	12.68%
SCFHP Percentile Ranking	>90th	>50th

[1] A lower rate indicates better performance.

[2] The PCR rate applies only to SCFHP's CMC line of business and includes members 18 years of age and older.

Frequency of Selected Procedures: Medi-Cal

Source: HEDIS data for 7/1/2017 – 6/30/2018 measurement period

Procedure	Number of Procedures	Procedures / 1,000 Member Months	NCQA Medicaid 50th Percentile	SCFHP Comparison to Benchmark
Tonsillectomy				
Male & Female, Age 0-9	205	0.32	0.63	↓
Male & Female, Age 10-19	83	0.12	0.29	↓
Hysterectomy, abdominal				
Female, Age 15-44	24	0.04	0.10	↓
Female, Age 45-64	47	0.16	0.24	↓
Hysterectomy, vaginal				
Female, Age 15-44	28	0.05	0.10	↓
Female, Age 45-64	37	0.12	0.17	↓

Frequency of Selected Procedures: Medi-Cal, Cont.

Source: HEDIS data for 7/1/2017 – 6/30/2018 measurement period

Procedure	Number of Procedures	Procedures / 1,000 Member Months	NCQA Medicaid 50th Percentile	SCFHP Comparison to Benchmark
Cholecystectomy, open				
Male, Age 30-64	7	0.02	0.03	↓
Female, Age 15-44	4	0.01	0.01	↔
Female, Age 45-64	4	0.01	0.03	↓
Cholecystectomy, closed (laparoscopic)				
Male, Age 30-64	70	0.17	0.26	↓
Female, Age 15-44	246	0.42	0.61	↓
Female, Age 45-64	90	0.30	0.58	↓

Frequency of Selected Procedures: Medi-Cal, Cont.

Source: HEDIS data for 7/1/2017 – 6/30/2018 measurement period

Procedure	Number of Procedures	Procedures / 1,000 Member Months	NCQA Medicaid 50th Percentile	SCFHP Comparison to Benchmark
Back Surgery				
Male, Age 20-44	24	0.07	0.19	↓
Female, Age 20-44	14	0.03	0.14	↓
Male, Age 45-64	39	0.16	0.52	↓
Female, Age 45-64	44	0.15	0.51	↓
Mastectomy				
Female, Age 15-44	20	0.03	0.02	↑
Female, Age 45-64	26	0.09	0.12	↓
Lumpectomy				
Female, Age 15-44	59	0.10	0.11	↓
Female, Age 45-64	81	0.27	0.34	↓

Frequency of Selected Procedures: Medi-Cal, Cont.

Source: HEDIS data for 7/1/2017 – 6/30/2018 measurement period

Procedure	Number of Procedures	Procedures / 1,000 Member Months	NCQA Medicaid 50th Percentile	SCFHP Comparison to Benchmark
Bariatric Weight Loss Surgery				
Male, Age 0-19	0	0.00	0.00	↔
Female, Age 0-19	0	0.00	0.00	↔
Male, Age 20-44	2	0.01	0.01	↔
Female, Age 20-44	23	0.05	0.05	↔
Male, Age 45-64	1	0.00	0.01	↓
Female, Age 45-64	19	0.07	0.06	↑

Medi-Cal Behavioral Health Metrics

Source: HEDIS data for 7/1/2017– 6/30/2018 measurement period

Measure	Rate	NCQA Medicaid 50th Percentile	SCFHP Percentile Rank
Follow-Up Care for Children Prescribed ADHD Medication			
Initiation Phase	31.58%	44.80%	>10th
Continuation & Maintenance Phase	29.79%	55.90%	<10th
Antidepressant Medication Management			
Acute Phase Treatment	57.99%	51.90%	>75th
Continuation Phase Treatment	35.29%	36.21%	>25th
Cardiovascular Monitoring for People with Cardiovascular Disease & Schizophrenia	50%	77.94%	<10th

Santa Clara Family Health Plan™

Questions?

Santa Clara
Family Health Plan

I. Purpose of the Quality Assurance (QA)

In order to present the results to Utilization Management Committee (UMC), Santa Clara Family Health Plan (SCFHP) completed the 3rd quarter review for timely, consistent, accurate and understandable notification to members and providers regarding adverse determinations.

II. Procedure

Santa Clara Family Health Plan reviewed in accordance to this procedure, 30 authorizations for the 3rd quarter of 2018 in order to assess for the following elements.

A. Quality Monitoring

1. The UM Manager is responsible for facilitating a random review of denial letters to assess the integrity of member and provider notification.
    a. At least 30 denial letters per quarter
    b. Is overseen by the Utilization Management Committee on a quarterly basis
    c. Assessment of denial notices includes the following:
        1. Turn-around time for decision making
        2. Turn-around time for member notification
        3. Turn-around time for provider notification
        4. Assessment of the reason for the denial, in clear and concise language
        5. Includes criteria or Evidence of Benefit (EOB) applied to make the denial decision and instructions on how to request a copy of this from UM department.
        6. Type of denial: medical or administrative
        7. Addresses the clinical reasons for the denial
        8. Specific to the Cal Mediconnect membership, the denial notification includes what conditions would need to exist to have the request be approved.
        9. Appeal and Grievance rights
        10. Member's letter is written in member's preferred language within plan's language threshold.
        11. Member's letter includes interpretation services availability
        12. Member's letter includes nondiscriminatory notice.
        13. Provider notification includes the name and direct phone number of the appropriately licensed professional making the denial decision

Quarterly Quality Report in Accordance with Procedure HS.04.01
For 3rd Quarter 2018

III. Findings

For the 3rd quarter review of 2018, the findings are as follows:

A. For the dates of services and denials for July, August and September of CY 2018 were pulled in the 3rd quarter sampling year.
   a. 30 unique authorizations were pulled with a random sampling.
      i. 57% or 17/30 Medi-Cal LOB and 43% or 13/30 CMC LOB
      ii. 100% or 30/30 were denials
      iii. 40% or 12/30 were expedited request; 60% or 18/30 were standard request.
         1. 100% or 12/12 of the expedited authorizations are compliant with regulatory turnaround time of 72 calendar hours
         2. 89% or 16/18 of the standard authorizations are compliant with regulatory turnaround time, 11% or 2/18 are non-compliant with regulatory turnaround time (5 business days for Medi-Cal LOB and 14 calendar days for CMC LOB)
      iv. 67% or 20/30 are medical denials, 33% or 10/30 are administrative denials
      v. 93% or 28/30 of cases were denied by MD, 7% or 2/30 cases were denied by a pharmacist.
      vi. 100% or 30/30 were provided member and provider notification.
      vii. 58% or 7/12 expedited authorizations were provided oral notifications to member.
      viii. 83% or 25/30 of the member letters are of member's preferred language.
      ix. 100% or 30/30 of the letters were readable and rationale for denial was provided.
      x. 97% or 29/30 of the letters included the criteria or EOC that the decision was based upon.
      xi. 100% or 30/30 of the letters included interpreter rights and instructions on how to contact CMO or Medical Director.

IV. Follow-Up

The Manager of Utilization Management and Director of Health Services reviewed the findings of this audit and recommendations from that finding presented to UMC are as follows:

1. Provide staff training regarding oral notification to member following an expedited service authorization determination.
2. Provide staff training in managing regulatory turnaround time based on LOB.
3. Monitor other causes of untimeliness such as FDRs and escalate it to compliance.
4. Provide staff training in checking member's preferred language when sending member's UM letters.
5. Continue QA monitoring and reporting.

Quarterly Quality Report in Accordance with Procedure HS.04.01
For 3rd Quarter 2018

Referral Tracking Report

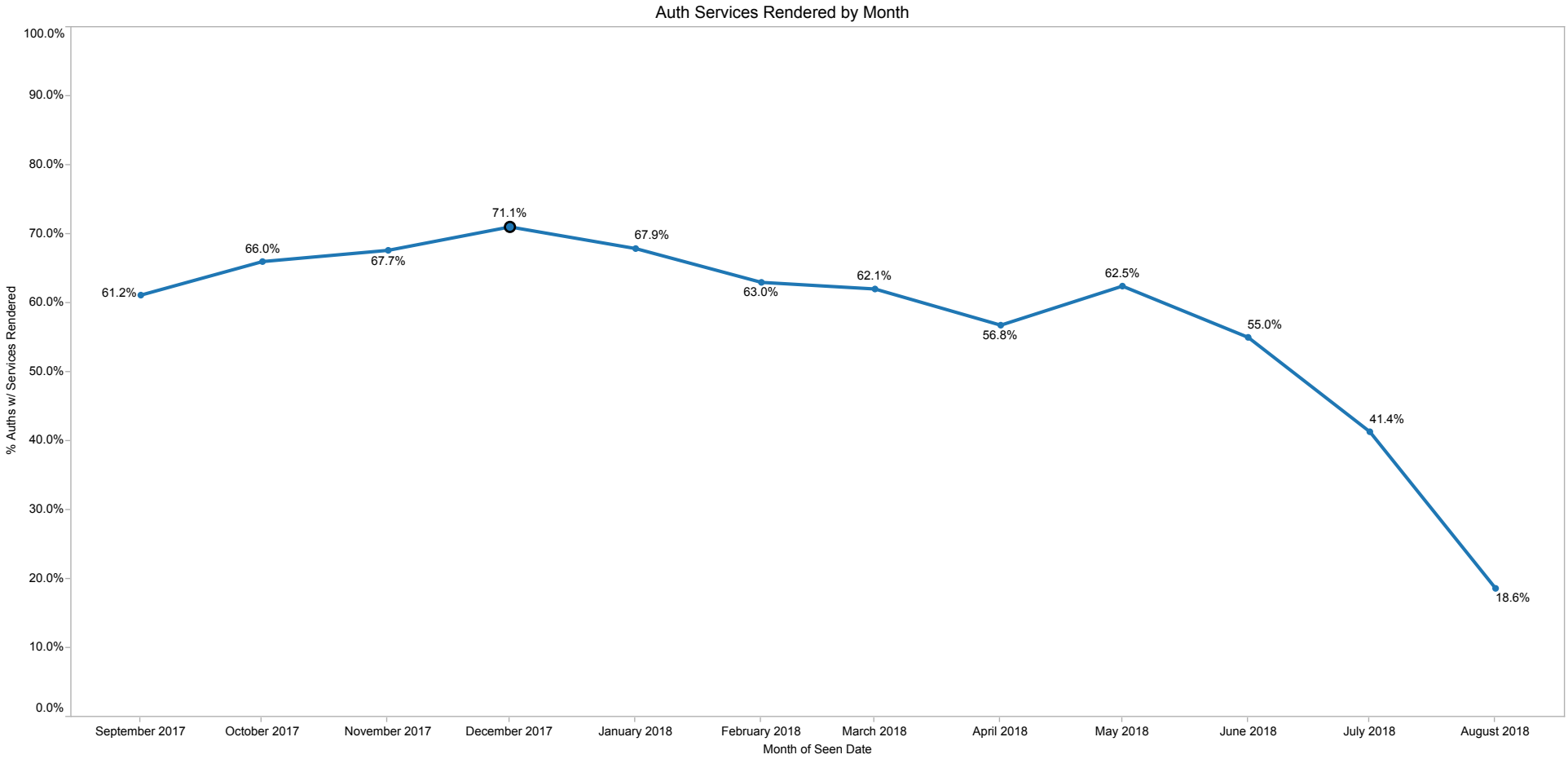
LOBRollupN..	Template	Disposition	Total # of Auths	# Auth Services Rendered within 90 days	# Auth Services Rendered After 90 days	# Auth Services Not Rendered	% Auths w/ No Services Rendered
Medi-Cal	CBAS	Retro Request	187	182	1	4	2.1%
		Routine - Extended Service	194	172	0	22	11.3%
		Routine - Initial Request	217	192	1	24	11.1%
	CONT OF CARE GR	Non Contracted Provider - Urg..	1	1	0	0	0.0%
		Routine - Initial Request	1	0	0	1	100.0%
	Dental	Non Contracted Provider - Ro..	1	0	0	1	100.0%
		Routine - Initial Request	60	34	0	26	43.3%
		Urgent - Initial Request	20	10	1	9	45.0%
	DME	Non Contracted Provider - Ret..	9	7	0	2	22.2%
		Non Contracted Provider - Ro..	16	10	1	5	31.3%
		Non Contracted Provider - Urg..	4	2	0	2	50.0%
		Retro Request	39	12	1	26	66.7%
		Routine - Extended Service	3	1	0	2	66.7%
		Routine - Initial Request	722	448	23	251	34.8%
		Urgent - Extended Service	5	3	0	2	40.0%
		Urgent - Initial Request	49	35	0	14	28.6%
	HomeHealth	Non Contracted Provider - Urg..	8	3	0	5	62.5%
		Retro Request	3	2	0	1	33.3%
		Routine - Initial Request	15	10	0	5	33.3%
		Urgent - Extended Service	9	4	0	5	55.6%
		Urgent - Initial Request	71	48	0	23	32.4%
	HOSPICE	Non Contracted Provider - Ret..	23	22	0	1	4.3%
		Non Contracted Provider - Ro..	11	7	0	4	36.4%
		Non Contracted Provider - Urg..	13	12	0	1	7.7%
		Retro Request	3	3	0	0	0.0%
		Urgent - Initial Request	2	0	0	2	100.0%
	OP-BehavioralGr	Non Contracted Provider - Ret..	38	35	1	2	5.3%
		Non Contracted Provider - Ro..	133	118	0	15	11.3%
		Non Contracted Provider - Urg..	5	5	0	0	0.0%
		Retro Request	40	39	0	1	2.5%
		Routine - Extended Service	14	13	0	1	7.1%
		Routine - Initial Request	202	148	3	51	25.2%

Referral Tracking Report

LOBRollupN..	Template	Disposition	Total # of Auths	# Auth Services Rendered within 90 days	# Auth Services Rendered After 90 days	# Auth Services Not Rendered	% Auths w/ No Services Rendered
Medi-Cal	OP-BehavioralGr	Urgent - Extended Service	1	1	0	0	0.0%
		Urgent - Initial Request	5	3	0	2	40.0%
	OP-Behavorial	Non Contracted Provider - Ret..	15	13	0	2	13.3%
		Non Contracted Provider - Ro..	49	23	0	26	53.1%
		Non Contracted Provider - Urg..	3	0	0	3	100.0%
		Retro Request	15	9	0	6	40.0%
		Routine - Extended Service	42	20	0	22	52.4%
		Routine - Initial Request	108	41	2	65	60.2%
		Urgent - Initial Request	6	1	0	5	83.3%
	OPHospital	Dental - Routine	38	31	1	6	15.8%
		Dental - Urgent	13	10	0	3	23.1%
		Non Contracted Provider - Ret..	28	15	0	13	46.4%
		Non Contracted Provider - Ro..	88	29	0	59	67.0%
		Non Contracted Provider - Urg..	73	34	1	38	52.1%
		Retro Request	133	53	0	80	60.2%
		Routine - Extended Service	97	32	0	65	67.0%
		Routine - Initial Request	2,076	1,173	23	880	42.4%
		Urgent - Extended Service	15	1	0	14	93.3%
		Urgent - Initial Request	721	415	8	298	41.3%
	OPHospitalGr	Non Contracted Provider - Ret..	2	1	0	1	50.0%
		Non Contracted Provider - Ro..	13	4	0	9	69.2%
		Non Contracted Provider - Urg..	4	3	0	1	25.0%
		Retro Request	113	78	0	35	31.0%
		Routine - Extended Service	61	16	0	45	73.8%
		Routine - Initial Request	1,138	543	13	582	51.1%
		Urgent - Extended Service	14	2	0	12	85.7%
		Urgent - Initial Request	485	303	2	180	37.1%
	Transportation	Non Contracted Provider - Ret..	2	0	0	2	100.0%
		Retro Request	226	91	1	134	59.3%
		Routine - Extended Service	5	3	0	2	40.0%
		Routine - Initial Request	1,051	315	19	717	68.2%
		Urgent - Extended Service	1	0	0	1	100.0%

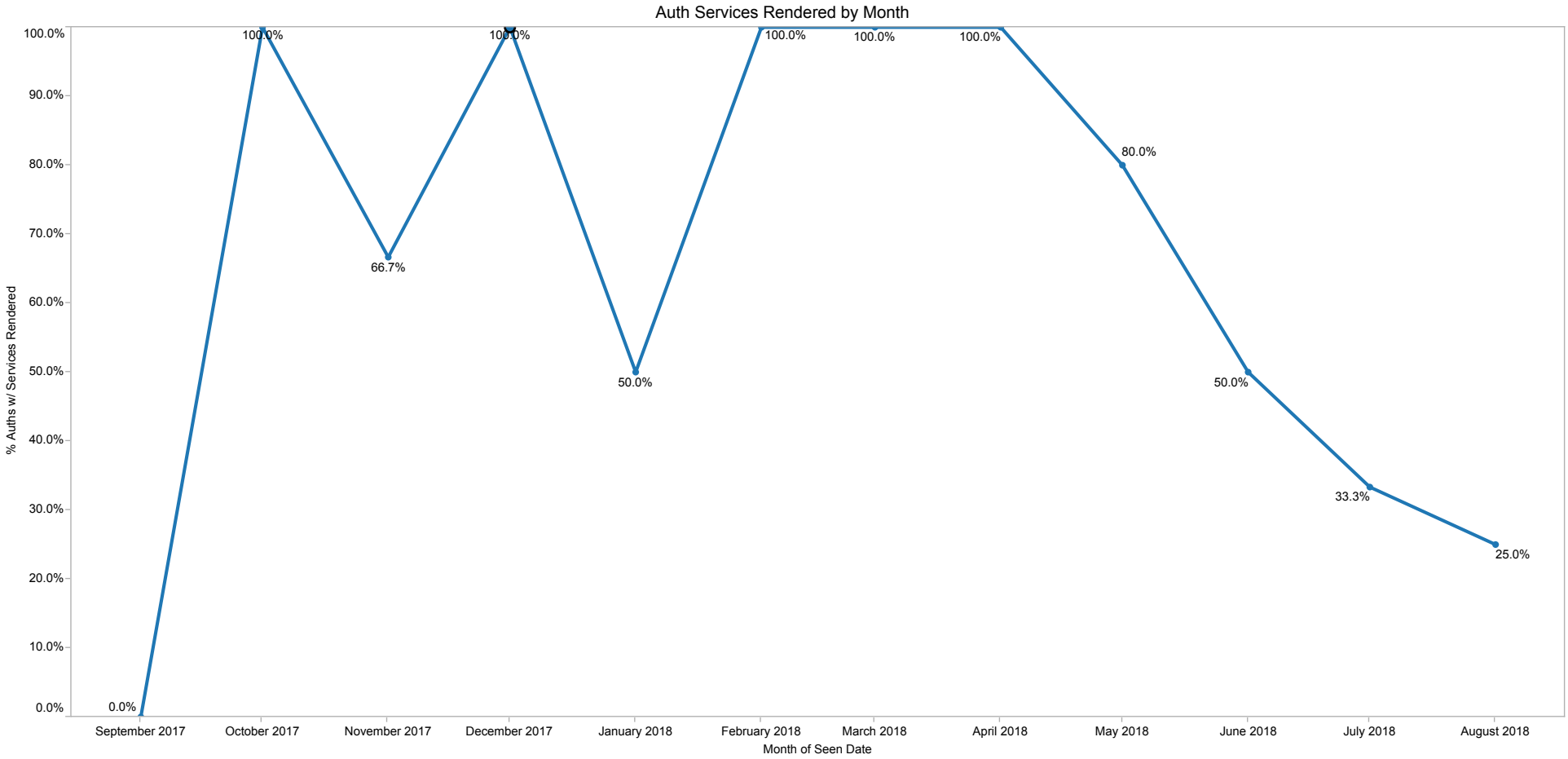
Referral Tracking Report

LOBRollupN..	Template	Disposition	Total # of Auths	# Auth Services Rendered within 90 days	# Auth Services Rendered After 90 days	# Auth Services Not Rendered	% Auths w/ No Services Rendered
Medi-Cal	Transportation	Urgent - Initial Request	27	10	0	17	63.0%
Grand Total			**8,786**	**4,851**	**102**	**3,833**	**43.6%**


Auth Services Rendered by Month
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
% Auths w/ Services Rendered
61.2%
66.0%
67.7%
71.1%
67.9%
63.0%
62.1%
56.8%
62.5%
55.0%
41.4%
18.6%
September 2017
October 2017
November 2017
December 2017
January 2018
February 2018
March 2018
April 2018
May 2018
June 2018
July 2018
August 2018
Month of Seen Date

Referral Tracking Report

LOBRollupN..	Template	Disposition	Total # of Auths	# Auth Services Rendered within 90 days	# Auth Services Rendered After 90 days	# Auth Services Not Rendered	% Auths w/ No Services Rendered
Healthy Kids	DME	Routine - Initial Request	1.00	1.00	0.00	0.00	0.0%
		Urgent - Initial Request	1.00	1.00	0.00	0.00	0.0%
	OP-BehavioralGr	Non Contracted Provider - Ro..	1.00	1.00	0.00	0.00	0.0%
		Routine - Extended Service	1.00	1.00	0.00	0.00	0.0%
		Routine - Initial Request	3.00	3.00	0.00	0.00	0.0%
	OP-Behavorial	Non Contracted Provider - Ret..	1.00	1.00	0.00	0.00	0.0%
		Non Contracted Provider - Ro..	1.00	1.00	0.00	0.00	0.0%
		Retro Request	2.00	2.00	0.00	0.00	0.0%
		Routine - Initial Request	1.00	1.00	0.00	0.00	0.0%
	OPHospital	Non Contracted Provider - Ro..	1.00	0.00	0.00	1.00	100.0%
		Retro Request	2.00	1.00	0.00	1.00	50.0%
		Routine - Extended Service	3.00	1.00	0.00	2.00	66.7%
		Routine - Initial Request	8.00	5.00	0.00	3.00	37.5%
		Urgent - Initial Request	8.00	1.00	0.00	7.00	87.5%
	OPHospitalGr	Retro Request	1.00	1.00	0.00	0.00	0.0%
		Routine - Extended Service	1.00	0.00	0.00	1.00	100.0%
		Routine - Initial Request	2.00	2.00	0.00	0.00	0.0%
Grand Total			**38.00**	**23.00**	**0.00**	**15.00**	**39.5%**

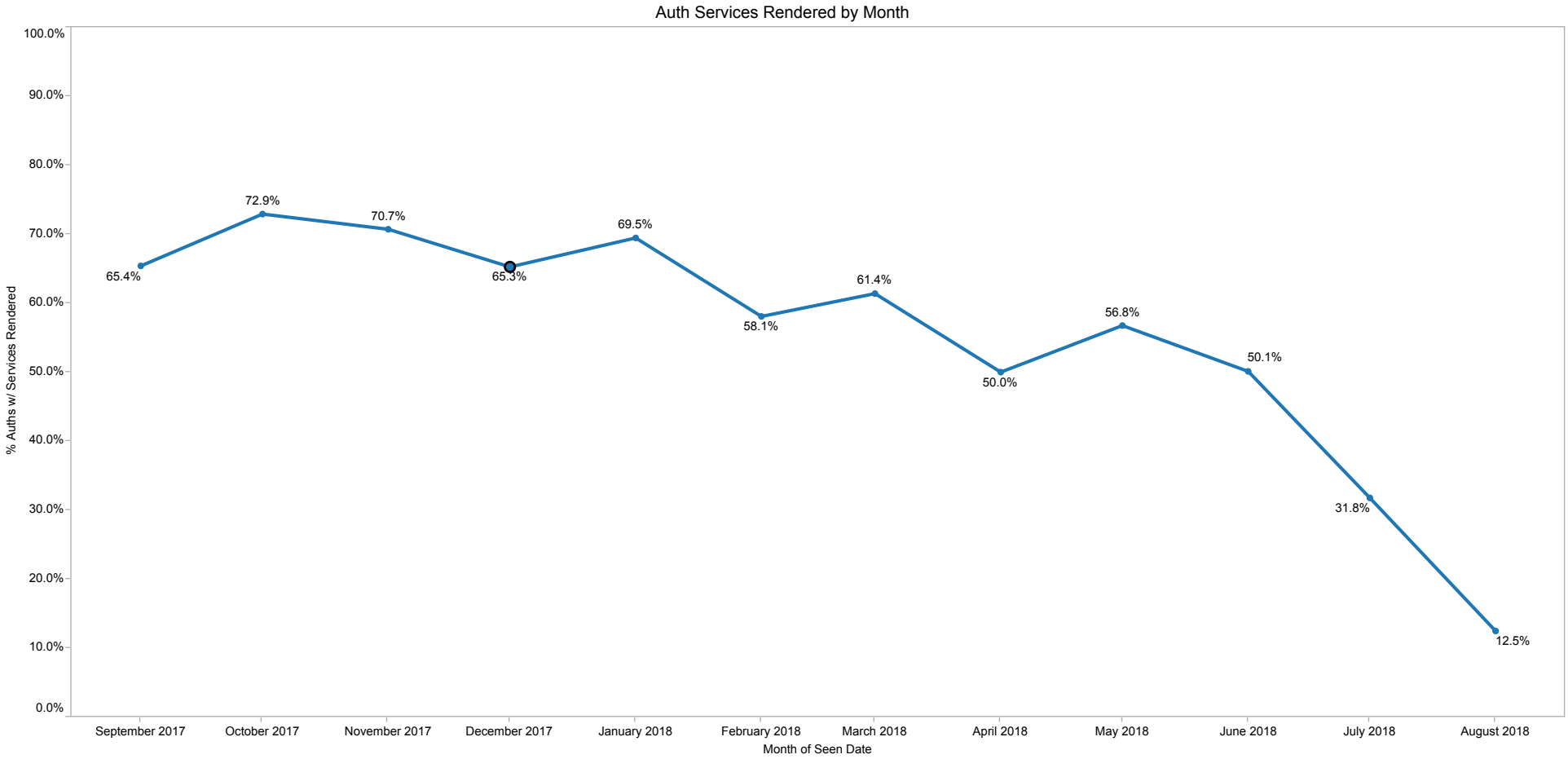

Auth Services Rendered by Month
% Auths w/ Services Rendered
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
0.0%
100.0%
66.7%
100.0%
50.0%
100.0%
100.0%
100.0%
80.0%
50.0%
33.3%
25.0%
September 2017
October 2017
November 2017
December 2017
January 2018
February 2018
March 2018
April 2018
May 2018
June 2018
July 2018
August 2018
Month of Seen Date

Referral Tracking Report

LOBRollupN..	Template	Disposition	Total # of Auths	# Auth Services Rendered within 90 days	# Auth Services Rendered After 90 days	# Auth Services Not Rendered	% Auths w/ No Services Rendered
Cal MediConnect	CBAS	Dental - Routine	1	1	0	0	0.0%
		Retro Request	19	17	0	2	10.5%
		Routine - Extended Service	18	15	0	3	16.7%
		Routine - Initial Request	35	29	0	6	17.1%
	CONT OF CARE	Non Contracted Provider - Ro..	1	1	0	0	0.0%
		Routine - Initial Request	1	0	0	1	100.0%
	DME	Non Contracted Provider - Ret..	4	4	0	0	0.0%
		Non Contracted Provider - Ro..	21	12	1	8	38.1%
		Non Contracted Provider - Urg..	7	3	0	4	57.1%
		Retro Request	42	17	1	24	57.1%
		Routine - Extended Service	8	4	0	4	50.0%
		Routine - Initial Request	538	391	11	136	25.3%
		Urgent - Initial Request	135	106	0	29	21.5%
	HomeHealth	Non Contracted Provider - Ro..	4	1	0	3	75.0%
		Non Contracted Provider - Urg..	82	37	0	45	54.9%
		Retro Request	11	6	0	5	45.5%
		Routine - Extended Service	38	15	0	23	60.5%
		Routine - Initial Request	66	33	0	33	50.0%
		Urgent - Extended Service	75	36	0	39	52.0%
		Urgent - Initial Request	383	258	0	125	32.6%
		Urgent – RN review; Expedite..	1	1	0	0	0.0%
	HOSPICE	Non Contracted Provider - Ro..	4	2	0	2	50.0%
		Non Contracted Provider - Urg..	5	4	0	1	20.0%
		Routine - Initial Request	3	3	0	0	0.0%
		Urgent - Initial Request	2	2	0	0	0.0%
	OP-BehavioralGr	Non Contracted Provider - Ret..	18	18	0	0	0.0%
		Non Contracted Provider - Ro..	10	7	0	3	30.0%
		Retro Request	5	5	0	0	0.0%
		Routine - Initial Request	14	9	0	5	35.7%
		Urgent - Initial Request	1	1	0	0	0.0%
	OP-Behavorial	Non Contracted Provider - Ret..	8	7	0	1	12.5%
		Non Contracted Provider - Ro..	9	4	0	5	55.6%

Referral Tracking Report

LOBRollupN..	Template	Disposition	Total # of Auths	# Auth Services Rendered within 90 days	# Auth Services Rendered After 90 days	# Auth Services Not Rendered	% Auths w/ No Services Rendered
Cal MediConnect	OP-Behavorial	Retro Request	7	7	0	0	0.0%
		Routine - Initial Request	8	3	0	5	62.5%
		Urgent - Initial Request	1	1	0	0	0.0%
	OPHospital	Non Contracted Provider - Ret..	23	17	0	6	26.1%
		Non Contracted Provider - Ro..	84	37	0	47	56.0%
		Non Contracted Provider - Urg..	61	30	0	31	50.8%
		Retro Request	136	50	0	86	63.2%
		Routine - Extended Service	46	10	0	36	78.3%
		Routine - Initial Request	1,460	562	33	865	59.2%
		Urgent - Extended Service	15	5	0	10	66.7%
		Urgent - Initial Request	681	358	7	316	46.4%
	OPHospitalGr	Non Contracted Provider - Ret..	3	3	0	0	0.0%
		Non Contracted Provider - Ro..	7	5	0	2	28.6%
		Non Contracted Provider - Urg..	2	2	0	0	0.0%
		Retro Request	18	10	0	8	44.4%
		Routine - Extended Service	6	3	0	3	50.0%
		Routine - Initial Request	96	40	2	54	56.3%
		Urgent - Initial Request	70	48	0	22	31.4%
	Transportation	Non Contracted Provider - Ret..	1	0	0	1	100.0%
		Retro Request	28	9	1	18	64.3%
		Routine - Initial Request	150	32	3	115	76.7%
		Urgent - Initial Request	2	0	0	2	100.0%
Grand Total			**4,474**	**2,281**	**59**	**2,134**	**47.7%**


Auth Services Rendered by Month
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
% Auths w/ Services Rendered
65.4%
72.9%
70.7%
65.3%
69.5%
58.1%
61.4%
50.0%
56.8%
50.1%
31.8%
12.5%
September 2017
October 2017
November 2017
December 2017
January 2018
February 2018
March 2018
April 2018
May 2018
June 2018
July 2018
August 2018
Month of Seen Date

2018 Q3 Nurse Advice Line Stats by LOB

*September 2018 data not yet received

07/01/2018 thru 8/30/2018

I. Call volume summary by Disposition

Medi-cal: (942) total calls to NAL

- (31) Triage dispositions to call 911/EMS immediately

Healthy Kids: (15) total calls to NAL

- (0) Triage dispositions to call 911/EMS immediately

Cal MediConnect: (45) total calls to NAL

- (4) Triage dispositions to call 911/EMS immediately

*General transcripts for all NAL calls given the disposition "Call 911/EMS immediately" are securely emailed to SCFHP's internal Case Management team daily, for immediate follow up.

II. Highest volume for Triage Guidelines used for Call types

Medi-Cal:

- CareNet Health Information Only
- Abdominal/Pelvic Pain
- Abnormal vaginal bleeding
- Urinary symptoms (female)
- Allergic reactions

Healthy Kids

- CareNet Health Information only
- Bites, Stings
- Rash/Hives
- Nasal allergies
- Eye pus or discharge

Cal MediConnect

- CareNet Health Information only
- BP Control problems
- Insect bites/stings

Santa Clara Family Health Plan™

InterRater Reliability Summary
2018 #2

1. In accordance with Policy HS.09, Santa Clara Family Health Plan (SCFHP) UM Staff scheduled and completed the second of two required Bi-Annual IRR testing sessions on 9/26/2018. The second IRR testing session is expected to be completed within the second half of calendar year 2018. In accordance with NCQA/DHCS, DMHC guidelines, and SCFHP policy, a total of 10 hypothetical UM authorizations are created for testing purposes for all of our Utilization Management (UM and MLTSS) staff, including non-licensed Care Coordinators (CC), licensed professional staff, and Medical Directors (MD).
2. The intent of the IRR testing process is to evaluate the consistency and accuracy of review criteria applied by all reviewers - physicians and non-physicians - who are responsible for conducting Utilization Management reviews and to act on improvement opportunities identified through this monitoring.
3. The Chief Medical Officer or Medical Director will review and approve the evaluation summary report reflecting the decision making performance of the staff responsible for conducting Utilization Management reviews. The report results and recommendations for improvement will be presented to the Utilization Management Committee.
4. The Plan classifies reviews into one of two performance categories: Proficient (80% - 100% of the records are in compliance with the criteria); Not proficient (below 80% in compliance) Scores below 80% require increased focus by UM Management with actions described in Policy HS.09 or a corrective action plan.

The following are the findings for all UM staff tested on:

UM Staff Position	Pass/Fail	Score %
Chief Medical Officer	Pass	95
Medical Director	Pass	98
Health Services Director	Pass	98
UM Manager	Pass	96
Lead Care Coordinator	Pass	93
UM review and DC planning nurse-1	Pass	81
UM review and DC planning nurse-2	Pass	85
Utilization Management Review Nurse-1	Pass	83
Utilization Management Review Nurse-2	Pass	85
Medical Management Care Coordinator-1	Fail	58
Medical Management Care Coordinator-2	Pass	90
Medical Management Care Coordinator-3	Pass	93
Medical Management Care Coordinator-4	Pass	90
Medical Management Care Coordinator-5	Pass	95
Medical Management Care Coordinator-6	Pass	93
Medical Management Care Coordinator-7	Pass	93
MLTSS UM review and DC planning nurse	Fail	73
MLTSS Case Manager-Nurse	Fail	71
MLTSS Medical Management Care Coordinator	Pass	88

In the 2nd testing in 2018, we found that 86% or 18/21 of our staff are proficient while, the remaining 14% or 3/21 is not proficient and will require remediation. 100 percent of UM staff completed the IRR testing including CMO, Medical Director, Licensed staff and Coordinators.

Identified common findings after this IRR testing process were as follows:

1. Improper identification of required turnaround time for specific lines of business.
2. Lack of understanding for specific Care Coordinator Guidelines.
3. Improper selection and application of clinical guidelines for medical review.

The corrective action's plan after identifying the common findings are:

1. Mandatory remedial training and with retest for staff that were found non proficient within 1 month of the IRR test. Completed on 10/5/2018.
2. Continued training to all UM and MLTSS staff for all UM process and workflows to comply with regulatory standards.
3. UM management weekly monitoring as outlined in UM procedure and quarterly report to UM committee.

Summary of the IRR remedial training:

1. Attendees: All staff that were found non proficient in the IRR testing (1 coordinator and 2 licensed staff).
2. Discussion topics:
    a. Identification of lines of business
    b. Regulatory turnaround time based on line of business
    c. Care Coordinator Guidelines
    d. UM Policy and procedure for Hierarchy of clinical criteria
    e. Selection and application of clinical criteria, specifically MCG
3. Retesting:
    a. 3 recreated hypothetical cases
    b. Scoring and passing score follows the same procedure as the IRR testing.
    c. All 3 staff that attended the remediation were re-tested and were found proficient.

UM Staff Position	Pass/Fail	Score %
Medical Management Care Coordinator-1	Pass	94
MLTSS UM review and DC planning nurse	Pass	89
MLTSS Case Manager-Nurse	Pass	89

Santa Clara
Family Health Plan

InterRater Reliability Summary
2018

1. In accordance with Policy HS.09, the 3rd bi-annual Calendar Year 2018, Santa Clara Family Health Plan (SCFHP) scheduled IRR testing is complete. This is required twice a year. IRR testing is scheduled for SCFHP 1st and 2nd half of the calendar year. In accordance with NCQA/DHCS, DMHC guidelines, and SCFHP policy, 10 random BH authorizations are selected to test BH staff with the authority to Authorize services. Our BH staff consists of non-licensed Personal Care Coordinators (PCC).
2. In the calendar year 2018, SCFHP updated the policy from individual testing to group testing to provide support to our staff.
3. It is the policy of SCFHP to monitor the consistency and accuracy of review criteria applied by all reviewers - physicians and non-physicians - who are responsible for conducting Behavioral Health service reviews and to act on improvement opportunities identified through this monitoring.
4. The Chief Medical Officer or Director of Behavioral Health will review and approve the assessment report of decision making performance of staff responsible for conducting Behavioral Health approval reviews for BH staff. The report results and recommendations for improvement will be presented annually to the Utilization Management Committee.
5. The Plan classifies reviews into one of two performance categories: Proficient (80% - 100% of the records are in compliance with the criteria); Not proficient (below 80% in compliance) Scores below 80% require increased focus by Supervisors/Managers with actions described in Policy/Procedure HS.09/HS.09.01 or an individual corrective action plan.

The following are the findings for all UM staff tested on March 9th, 2018:

Reviewer	Percent Score	UM Staff Position	Pass/Failed
1	100	Behavioral Health PCC	Pass
2	80	Behavioral Health PCC	Pass
3	60	Behavioral Health PCC	Failed

In the first testing, we found that 2/3 of our staff are proficient during this review; the departments newest PCC received a score of 60/100, indicating a need for further training. Thus, 67% or 2 of 3 of BH staff who took this exam completed the IRR testing with a pass. However, 100% of BH staff who have been *currently* involved in authorizations passed this IRR test; PCC #3 has not been involved in unsupervised authorizations to date.

PCC #3 was provided additional training on 9/27/2018 and passed the re-test with a score of 90%. Retest provided on 9/28/2018.

Currently all Behavioral Health Department PCCs have received a passing grade.

Our common finding after the testing process was:

1. Staff who are currently authorized to review/approve BH services through SCFHP express comfort in knowing the process/where to go to for clarification.
2. While ongoing support throughout the department is provided, additional training is required for our new PCC (PCC #3) to review process of authorizations. This training was provided on 9/27/2018 and retesting completed on 9/28/2018.

The corrective action's plan after identifying the common findings:

1. Mandatory remedial training with post testing for all non-proficient staff
    a. Training review (9/27/2018) and retesting (9/28/2018) took place with PCC #3.
2. Mandatory bi-annual review of guidelines and criteria, as well as biannual testing, will continue to be scheduled for all staff who complete Behavioral Health Authorizations.

Santa Clara Family Health Plan 12 9

Cal MediConnect Operations Dashboard -

	2017				
	YTD	Jul	Aug	Sept	YTD
Pre-Service Organization Determinations - BH					
Standard Part C					
# of Prior Authorization Requests Received	**10**	5	-	6	**11**
# of Prior Auth Requests Completed within 14 days	**10**	5	-	6	**11**
% of Timely Decisions made within 14 days	**100.0%**	100.0%	#DIV/0!	100.0%	**100.0%**
# Approved	**10**	5	-	6	**11**
# Denied	**-**	0		-	**-**
% Approved	**100.0%**	100.0%	#DIV/0!	100.0%	**100.0%**
# of Prior Authorization Notification Sent	**unavailable**	5	0	6	**11**
# of Prior Authorization Notification Sent Within 14 Days	**unavailable**	5	0	6	**11**
% timely notification of BH decision	**unavailable**	100.0%	n/a	100.0%	**100.0%**
Expedited Part C					
# of Prior Authorization Requests Received	**3**	0	1	0	**1**
# of Prior Auth Requests Completed within 72 Hours	**3**	0	1	0	**1**
% of Timely Decisions made within 72 Hours	**100.0%**	n/a	100.0%	n/a	**100.0%**
# of Requests with Extensions	**unavailable**	unavailable	unavailable	unavailable	**unavailable**
# Approved	**3**	0	1	0	**1**
# Denied	**-**	0	0	0	**-**
% Approved	**100.0%**	n/a	100.0%	n/a	**0.0%**
# of Prior Authorization Notification Sent	**unavailable**	0.0%	1	0	**1**
# of Prior Authorization Notification Sent Within 72 hours	**unavailable**	0.0%	1	0	**1**
% timely notification of BH decision	**unavailable**	n/a	100.0%	0.0%	**100.0%**
Urgent Concurrent Organization Determinations					
# of Urgent Concurrent Requests Received	-	0	0	0	-
# of Urgent Concurrent Requests Completed within 24 Hours	-	0	0	0	-
% of Timely Decisions made within 24 Hours	**unavailable**	n/a	n/a	n/a	**n/a**
# Approved	-	0	-	-	-
# Denied	-	0	0	0	-
% Approved	**unavailable**	n/a	n/a	n/a	**n/a**
# of Prior Authorization Notification Sent	**unavailable**	0	0	0	-
# of Prior Authorization Notification Sent Within 24 hours	**unavailable**	0	0	0	-
% timely notification of BH decision	**unavailable**	n/a	n/a	n/a	**n/a**
Post Service Organization Determinations					
# of Requests Received	-	5	2		**7**
# of Post Service Requests Completed within 30 Days	-	5	2		**7**
% of Timely Decisions made within 30 days	n/a	100.0%	100.0%	n/a	**100.0%**
# of Requests with Extensions	**unavailable**	unavailable	unavailable	unavailable	**unavailable**
# Approved	-	5	2	4	**11**
# Denied	-	0	0	0	-
% Approved	n/a	100.0%	100.0%	n/a	**157.1%**
# of Prior Authorization Notification Sent	**unavailable**	5	2	4	**11**
# of Prior Authorization Notification Sent Within 30 Days	**unavailable**	5	2	4	**11**
% timely notification of BH decision	**unavailable**	100.0%	100.0%	100.0%	**100.0%**

Santa Clara Family Health Plan 12 9

Medi-Cal Operations Dashboard

	2017	2018			
	YTD	Jul	Aug	Sept	YTD
Medical Authorizations - BH					
Routine Authorizations					
# of Routine Prior Authorization Requests Received	**101**	37	54	44	**464**
# of Routine Prior Authorization Requests Completed within 5 Business Days	**101**	37	53	44	**442**
% of Timely Decisions made within 5 Business Days of request	**100.0%**	100.0%	98.1%	100.0%	**95.3%**
# of Prior Authorization Notification Sent	**unavailable**	37	54	44	**183**
# of Prior Authorization Notification Sent Within 5 Business Days	**unavailable**	36	54	44	**182**
% timely notification of BH decision	**unavailable**	97.3%	100.0%	100.0%	**99.5%**
Expedited Authorizations					
# of Expedited Prior Authorization Requests Received	-	2	2	4	**21**
# of Expedited Prior Authorization Requests Completed within 72 Hours	-	2	2	4	**18**
% of Timely Decisions made within 72 Hours of request	**#DIV/0!**	100.0%	100.0%	100.0%	**85.7%**
# of Prior Authorization Notification Sent	**unavailable**	2	2	4	**11**
# of Prior Authorization Notification Sent Within 72 hours	**unavailable**	2	2	4	**10**
% timely notification of BH decision	**unavailable**	100.0%	100.0%	100.0%	**90.9%**
Urgent Concurrent Review					
# of Urgent Concurrent Requests Received	-	0	0	0	-
# of Urgent Concurrent Requests Completed within 24 Hours of request	-	0	0	0	-
% of Timely Decisions made within 24 Hours of request	**#DIV/0!**	n/a	n/a	n/a	**n/a**
# of Prior Authorization Notification Sent	**unavailable**	unavailable	unavailable	0	
# of Prior Authorization Notification Sent Within 24 hours	**unavailable**	unavailable	unavailable	0	
% timely notification of BH decision	**unavailable**	unavailable	unavailable	n/a	**n/a**
Restrospective Review					
# of Retrospective Requests Received	**10**	10	7	30	**86**
# of Retrospective Requests completed within 30 Calendar Days of request	**10**	10	7	30	**85**
% of Retrospective Reviews completed within 30 Calendar Days of request	**100.0%**	100.0%	100.0%	100.0%	**98.8%**
# of Prior Authorization Notification Sent	**unavailable**	10	7	30	**53**
# of Prior Authorization Notification Sent Within 30 Calendar days	**unavailable**	10	7	30	**53**
% timely notification of BH decision	**unavailable**	100.0%	100.0%	100.0%	**100.0%**
Denied Authorizations (Routine, Expedited, CCR, Retro)					
Total Requests Approved	**106**	48	61	78	**483**
Total Requests Denied	**5**	1	2	0	**9**
Total Requests Pended/Extended	-	unavailable	unavailable	0	-
Total Requests Cancelled	-	unavailable	unavailable	0	-
% of Total Requests Denied	**4.5%**	2.0%	3.2%	0.0%	**1.8%**