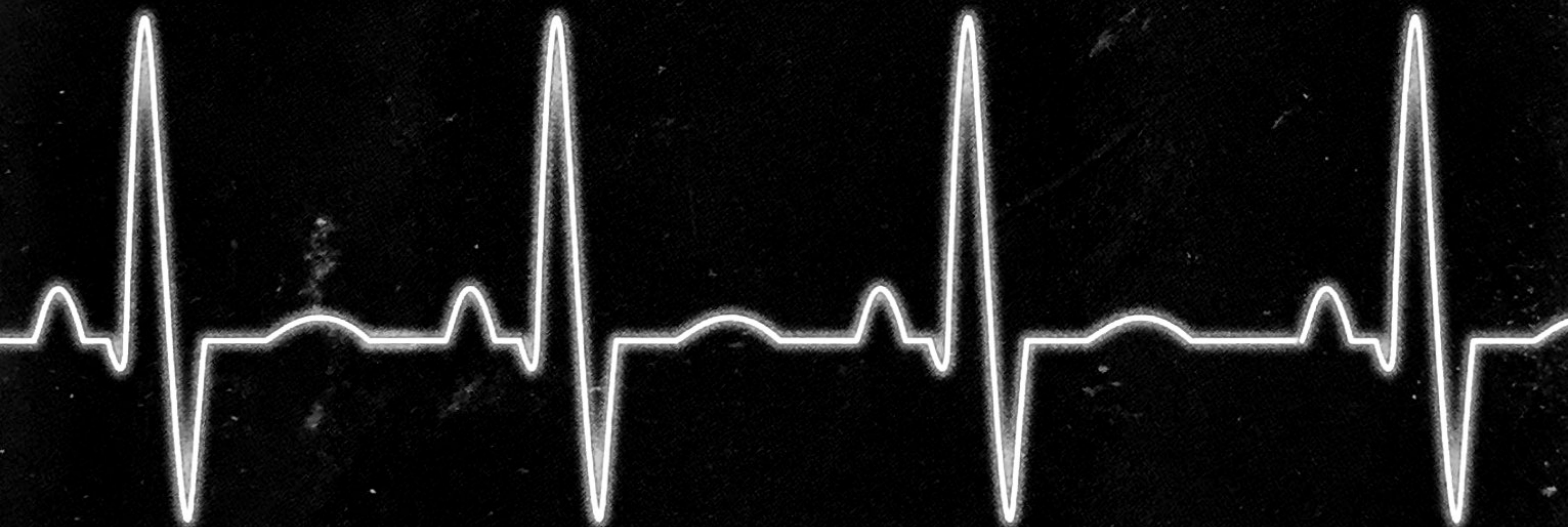
STAT NOTES

TORONTO NOTES



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Notice

Welcome to *Stat Notes* - your first stop for managing ward issues while on call. In the following pages, we present a bare bones approach to the diagnosis and acute management of the most common and serious ward complaints that may arise. The focus is on the "don't miss" diagnoses - those that need to be ruled out in the middle of the night. We've sized the booklet to fit conveniently in your scrubs pocket so you can have it on hand when you need it most.

The editors have taken every effort to ensure the information contained herein is accurate and conforms to the standards accepted at the time of publication. However, in no way does it replace clinical judgment nor mitigate the need for clinical expertise. The reader is to exercise clinical judgment and consult with other sources of information that may become available with continuing research.

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STAT NOTES

TABLE OF CONTENTS

Taking the call 2
Triaging 2
Before the Bedside 2
ABCs 3
- Airway (Choking or Stridor) 4
- Breathing (Dyspnea or ↓O_2 SAT) 5
- Circulation (Hypotension) 6

Management of Complaint
- Abdominal Pain 7
- Blood Per Rectum 8
- Chest Pain 9
- Decreased LOC 10
- Delirium 11
- Difficulty sleeping 12
- Fall 13
- Fever 14
- Headache 15
- Hematemesis 16
- Hypercalcemia 17
- Hyperglycemia 18
- Hyperkalemia 19
- Hypertension 20
- Hypoglycemia 21
- Hypokalemia 22
- Leg Pain 23
- Nausea/Vomiting 24
- Seizure 25
- Tachycardia 26
- Urinary Retention 27

Acute Cause-Specific Management 28
Documentation 31
Appendix: ATLS Algorithm 32

TAKING THE CALL

Return pages quickly with pen and paper at hand. Provide the caller with your name, qualification, and the team you are working with.

Collect and record the following information:

1. Name of nurse
2. Name of patient
3. Reason for concern
4. "Is the patient stable?"
5. Most recent vitals
6. Level of consciousness

Details:

1. Time of onset
2. Is this a new problem for the patient?
3. Has the patient changed since you received them at handover?
4. Ask about associated signs & symptoms as pertinent:
    - Pain anywhere, confusion, psychosis, H/A, SOB, cough, nausea, vomiting, diarrhea, constipation, dysuria, urinary retention, focal neurological signs (difficulty speaking, difficulty swallowing, vision changes, weakness, numbness, ataxia)
5. Time of call

TRIAGING

Issues that can be dealt with over the phone most of the time:

- Glycemic control issues (unless v. low or v. high)
- Minor electrolyte issues (eg. K 3.0-5.5)
- Laxatives

Never deal with cardiac, neurological, or respiratory issues over the phone.
When in doubt, see the patient!

BEFORE THE BESIDE

If the patient is stable, find and briefly review the patient's chart. Read the admission note and most recent progress notes (last 3-4 days or so) for relevant background information.

ABCs

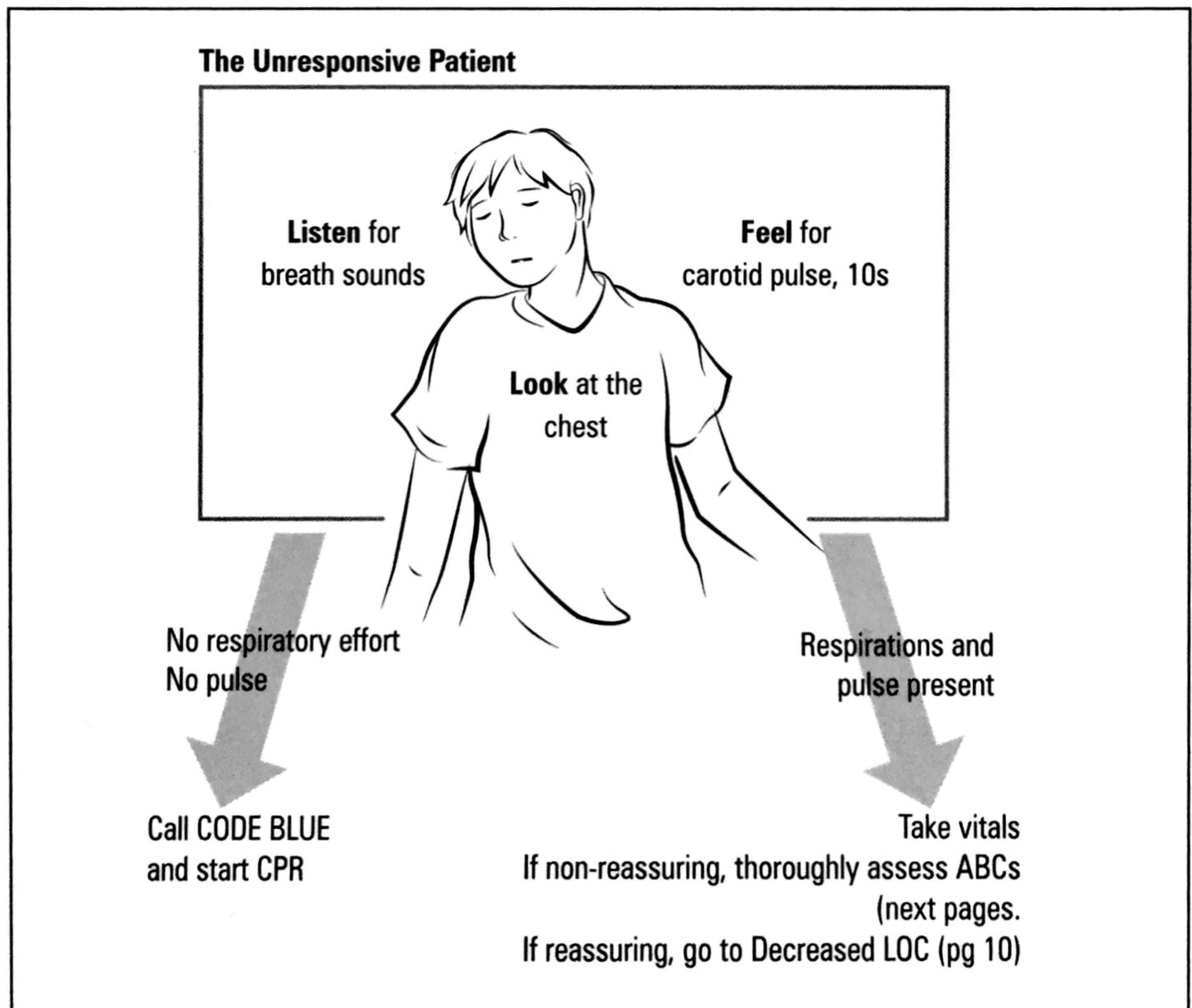
In most situations, intact ABCs can be verified in two easy steps:

1. Talk with the patient and observe that they respond coherently and without breathing difficulty
2. Obtain vital signs (RR, O_2, HR, BP, T). Ideally double check these yourself. Document "Alert and oriented x3, no resp. distress, RR: O_2: HR: BP: T:

The Unresponsive Patient

Look at the chest
Listen for breath sounds
Feel for carotid pulse (no longer than 10 seconds)

- No respiratory effort, no pulse → Call CODE BLUE and start CPR.
- Respirations and pulse present → Take vitals to assess for airway compromise, breathing insufficiency, and hypotension



AIRWAY (CHOKING OR STRIDOR)

Complete Obstruction
Heimlich manoeuvre / abdominal thrusts. CODE BLUE.

Incomplete Obstruction (stridor, audible choking)
1. Jaw thrust or chin lift. Obtain suction.
2. Suction oropharynx and remove any visible foreign bodies.
3. Give O_2 and obtain pulse oximetry. Get RT help.
4. If intubation may be necessary, alert anaesthetist (or CODE BLUE).

Differential Diagnosis

	H&P Features	Tests to Consider
Anaphylaxis	Angioedema, urticaria, exposure to agent, hypotn	
Aspiration of:		
Foreign body	Dementia, confusion, child	CXR
Secretions/phlegm	Dementia, dysphagia, pneumonia, bronchitis	CXR
Gastric contents	Hx of vomiting, GERD	
Croup	Child, barky cough	
Trauma	Hx of trauma	CXR, CT chest
Tumor	Hx of neoplasms, fever, wt loss, night sweats	CXR, CT chest

Acute Management

Anaphylaxis	Epinephrine 0.3mg IM or SUBQ q5min, diphenhydramine
Aspiration	Abdominal thrusts, Heimlich maneuver, DL + McGill forceps, cricothyroidotomy, urgent ENT consult for bronchoscopy
Croup	Humidified oxygen, nebulized epinephrine, dexamethasone
Trauma	Suction, aggressive fluid resuscitation, urgent ENT consult
Tumor	Modify position to maximize patency, urgent surgical consult

BREATHING (DYSPNEA OR ↓O_2 SAT)

On Arrival

1. Get pulse oximetry, raise head of bed, and give O_2.
2. Get a Respiratory Therapist involved.

History & Physical - Don't miss

Hx: Speed of onset, chest pain, limb pain, medications, cough, cardiac risk factors, PMH (asthma, COPD, allergies, anaphylaxis, CAD, T1DM).*O/E*: Vitals with temp, resp, angioedema, urticaria, JVP, limbs.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Pneumothorax	Hyperresonance, poor a/e, tracheal deviation	CXR (if hypotensive, aspirate immediately)
MI	Rapid onset, cardiac RFs, Hx CAD, chest pain	ECG, serial troponin
PE	Wells Criteria for PE	D-dimer → CT-PA
Heart failure	Hx HF, ↑JVP, crackles, edema	BNP, CXR, ECG
Severe asthma	Hx asthma, wheezing	Trial of B-agonist
COPD exacerbation	Hx COPD, wheezing	CXR, ABGs, peak flow
Anaphylaxis	New meds or exposures, angioedema, ↓BP	
Severe anemia	Pallor, tachycardia	CBC, Crossmatch
Septic pneumonia	Fever, tachycardia, ↓BP	CXR, blood cultures
Metabolic acidosis	Ingestions, renal pt, T1DM	ABG, lytes, Cr, glucose

Common Causes
HF, COPD, asthma, atelectasis, anxiety

Comprehensive Approach
Cardiac (ischemic, valve, cardiomyopathy, pulmonary hypertension), Respiratory (airways, alveoli [pus, edema, blood], interstitium, vasculature, pleura), Hemo-Metabolic (acidosis, anemia)
Tests to consider: CBC, ABG, ECG, CXR, ECHO, spirometry

Acute Management

1. Treat cause. See *Cause-Specific Management* (pg 28-30).
2. *Symptomatic Treatment (eg.if palliative):* Morphine 2.5-5mg SC/IM/IV q4h PRN

CIRCULATION (HYPOTENSION)

On Arrival

1. If HR >150 or irregular, use ACLS Tachycardia Guideline (cardiovert).
2. If hypovolemia is suspected, obtain good IV access (16 gauge). If hemorrhage suspected, cross-match 2U pRBC STAT.
3. Order STAT 12-lead ECG.

History & Physical - Don't miss

Hx: Time course, bleeding hx (melena, BRBPR, hematemesis, hematuria), prior hx of bleeding, low BP, C/P, SOB, cardiac medications, palpitations
O/E: Orthostatic vitals, JVP, cyanosis, cardiac, resp

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Hypovolemia	Tachycardia < 150, ↓U/O, ↓JVP	Cr, BUN, lactate, Group&Sc, Xmatch
Anaphylaxis	Exposure to agent, SOB, wheezing, angioedema	Clinical Dx (act quickly)
Sepsis	Fever, source of infection (skin, resp, abdo, urine)	CBC, U/A, CXR, U/S, blood and urine C&S
Arrythmia/ cardiogenic shock	Palpitations, pulse irregular, dyspnea, ↑JVP	ECG, See *Tachycardia* (pg 25)
Cardiac tamponade	Beck's triad – muffled heart sounds, ↑JVP, hypotension	ECG, CXR, Echo
PE	PERC, Wells criteria for PE	D-dimer → CT-PA

Common Causes
Vasovagal Syncope, Hypovolemia, Medications (β-blockers)

Comprehensive Approach
Approach: Cardiogenic (right vs. left heart) vs vasogenic (septic, anaphylactic, neurogenic) vs blood (hypovolemic, hemorrhagic, toxins/poisoning)

Acute Management

1. Treat cause. See *Cause-Specific Management* (pg 28-30).
2. Lay flat, raise legs. Bolus 2L N/S through 2 large-bore IVs (unless in HF).

ABDOMINAL PAIN

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Red flags: severe pain, signs of shock (hypotension, tachycardia, diaphoresis, confusion), signs of peritonitis, abdo distention.

History & Physical - Don't miss

Hx: Characterize pain, associated symptoms (N/V, diarrhea, constipation, melena, hematochezia, urinary symptoms, vaginal discharge), gyne history.
O/E: Vitals with temp, abdo, pelvic, DRE.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Perforated viscus	Fever, rigid abdomen	Upright CXR (free air), CT
Appendicitis	McBurney point, fever, rigid abdomen, Rovsing's sign	Abdo U/S, CT
Bowel obstruction	Distension, obstipation, rigid abdomen, hernia/rectal mass	Abdo X-ray, CT
Mesenteric ischemia	Pain out of proportion of physical findings, vasculpath	Abdo X-ray, CT
Pancreatitis	Relieved by leaning forward	Amylase
Cholecystitis	Fever, RUQ pain, referred pain to scapula	Abdo U/S
Cholangitis	Fever, jaundice, RUQ pain	Abdo U/S, CBC, Bili
MI	Cardiac risk factors, epigastric pain, rapid onset	ECG, Serial troponin
Ruptured AAA	Pulsatile abdo mass, weak distal pulses, rad'n to back	Abdo U/S
Testicular torsion	Male, tender testes, unilateral	Doppler U/S
Gynecology	Female (consider ectopic, ROC, ovarian torsion)	β-HCG, pelvic U/S

Comprehensive Approach
GI (bowel, mesentery, liver, gallbladder, pancreas), GU (bladder, ureters, kidneys, testes), aorta (AAA), thoracic (cardiac, respiratory), hemometabolic (hypercalcemia).
± Gyne (uterus, ovaries, endometriosis)

Acute Management

1. See *Cause-Specific Management* (pg 28-30). Consider GenSurg consult.

BLOOD PER RECTUM

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Vomiting blood? (if yes, go to *Hematemesis*, pg 16).
3. Order Group & Screen and CBC

History & Physical - Don't miss

Hx: Hematochezia, melena, hematemesis, diarrhea, recent travel, PMH vasculopathy, previous bleeds, meds (NSAIDs, warfarin, heparin, laxatives)
O/E: Vitals with temp, cardiac, resp, JVP, abdo exam, DRE

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Peptic ulcer	melena, epigastric pain	gastroscopy
Diverticular bleed	painless bleeding (± LLQ cramping)	CT (if stable), colonoscopy
Colorectal Ca bleed	painless bleeding, recent wt loss, anemia	CT (if stable), colonoscopy
Ischemic bowel	++ abdo pain	AXR, CT (if stable)
Toxic megacolon	++pain, PMHx (IBD or infectious colitis, tenesmus)	AXR

Common Causes
Diverticular, angiodysplasia, idiopathic

Comprehensive Approach
Anatomical (diverticular), vascular (angiodysplasia, anorectal [hemorrhoids, fissures], inflammatory (infectious, IBD, radiation, ischemic), neoplastic (colorectal cancer)
Tests: CBC, lytes, stool cultures, AXR, tagged RBC scan, CT abdo, CT Angio

Acute Management

1. Resuscitative measures. NPO. NG tube. IV PPI. Urgent GI & GenSurg consults.
2. Monitor Hb, transfuse if indicated. See *Cause-Specific Management* (pg 28).

Before You Leave

Does the patient need a monitored bed?

CHEST PAIN

On Arrival

ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).

History & Physical - Don't miss

Hx: Onset, location, duration, quality, radiation, severity, precipitating/relieving factors, PMHx, recent trauma/falls
O/E: Vitals with temp, resp, cardiac, abdo, inspect limbs

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
MI	Rapid onset, retrosternal, tightness, radiates to arms or neck, persists >30 min	Serial ECG, serial troponin
Pericarditis	Sharp, pleuritic, relieved by leaning forward, friction rub	ECG, ECHO
Aortic Dissection	Sudden, tearing pain, may radiate to back	CT
PE	Wells criteria	D-dimer → CT-PA
Pneumothorax	Hyperresonance, decreased a/e, tracheal deviation	CXR (if hypotensive, aspirate immediately)
Esophageal perforation	Hx vomiting or trauma, subcutaneous emphysema	CXR, contrast esophagogram, CT

Common Causes
GI (GERD, esophageal spasm), MSK (muscle strain), anxiety.

Comprehensive Approach
Cardiac (myocardium, pericardium, arrythmias), Pulmonary (parenchymal, pleural), MSK (ribs, spine, cartilage, muscles), GI (esophagus, stomach, bowel, liver, gallbladder, pancreas)
Tests to consider: CBC, ABG, CXR, ECG, Troponin, ECHO

Acute Management

Treat cause. See *Cause-Specific Management* (pg 28-30).

DECREASED LOC

On Arrival

1. Vitals with O_2 sats. If vitals compromised, go to *ABCs* (pg 3-6).
2. Rapid neuro assessment: GCS, pupil reaction, nuchal rigidity, deep tendon reflexes, plantars. Attempt power (eg "squeeze my hand").
3. Order Accucheck. Start IV and draw initial bloods (STAT if worried): CBC, extended lytes, Cr, glu, liver profile, INR, PTT. Order urine dip.
4. Consider "universal antidotes": O_2, thiamine, dextrose, naloxone.
5. Obtain collateral Hx (prior complaints of h/a, neuro Sxs, med changes).

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
CNS structural (bleed/herniation)	Rapid onset, focal neuro signs, h/a, n/v	CT head, LP
Stroke	Sudden onset, focal neuro	CT head ± CTA
Meningitis/encephalitis	Fever, h/a, meningismus, photophobia	LP, CT head, blood cultures
Sepsis	subacute onset (30min-5hrs)	CXR, panculture
Electrolyte disturbance	diuretic use, arrhythmia, hyper/ hyporeflexia	ECG
Acid/Base disturbance	hypo/hyperventilation	ABGs
DKA/HHNS	Hx DM, n/v	Serum glu & ketones
Hepatic/renal encephalopathy	Hx liver/renal disease, asterixis	Bloodwork as above
Cardiac (MI, HF)	Hx cardiac disease	ECG, troponins, CXR
Status epilepticus	Hx epilepsy	EEG
Opioid toxicity	pinpoint pupils, ↓resp effort	Clinical Diagnosis
Other drug toxicity/ withdrawal*	Confusion, hallucinations, myosis/ mydriasis, Δvitals, Δreflexes, diaphoresis/dry	Tox screen (blood & urine), EtOH level, ECG

*esp EtOH, BZD, antipsych, anticholinergic, anithistamine, TCA, opioid

Less urgent causes – Somnolence (eg. secondary to medication), non-septic delirium (UTI, pain), derangements in T3/T4, B12. Consider TSH, B12.

Acute Management

See *Cause-Specific Management* (pg 28-30). Consider ↑monitoring/ICU/ neurovitals.

DELIRIUM

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Assess safety. (Is this patient going to become violent?).

History & Physical - Don't miss

Hx: Pt's cognitive baseline, infectious symptoms, pain, meds
O/E: Vitals with temp, neuro, cardiac, resp, abdo

Differential Diagnosis

Urgent/emergent causes (rule out)
See *Decreased LOC* pg 10 (same urgent DDx).

Common Causes
UTI, pneumonia, pain, MI, stroke

Comprehensive Approach
I WATCH DEATH (**I**nfectious, **W**ithdrawal, **A**cute metabolic, **T**rauma, **C**NS pathology, **H**ypoxia, **D**eficiencies, **E**ndocrinopathies, **A**cute vascular, **T**oxins, **H**eavy metals)
Tests to consider: CBC, ext. lytes, glucose, Cr, Liver profile, TSH, B12, blood cultures, tox screen, med levels, urine C&S, R&M, ECG, CXR, CT head

Acute Management

1. Treat cause. See *Cause-Specific Management* pg 27-29.
2. Reorientation: Calendars, clocks, familiar items, optimize hearing/vision.
3. Manage aggression if danger to staff or self: Chemical restraints (haloperidol, risperidone), physical restraints (soft 4 point restraints).

GLASGOW COMA SCALE

Motor	Verbal	Eyes
6 - Follows commands	5 - Alert and oriented	4 - Open spontaneously
5 - Localizes pain	4 - Disoriented, confused	3 - Open to voice
4 - Withdraws to pain	3 - Inappropriate words	2 - Open to pain
3 - Decorticate flexion	2 - Moans, unintelligible	1 - No response
2 - Decerebrate extension	1 - No response	
1 - No response		

DIFFICULTY SLEEPING

History & Physical - Don't miss

Hx: Delirium screen (oriented to time, place, and person?), presence of pain, difficulty breathing, what does the patient think is keeping him/her awake?
Take a sleep history – inquire about patient's typical sleep patterns and habits (regular sleep schedule, history of difficulty falling asleep/staying asleep, use of caffeine and alcohol), review meds (esp psych meds, glucocorticoids)
O/E: Vitals, cardiac, resp, toxodromes (pupils, diaphoresis)

Differential Diagnosis

Medical causes to consider:

- Delirium
- Pain
- Cardiac (orthopnea, paroxysmal nocturnal dyspnea)
- Pulmonary (COPD, asthma, OSA)
- Psychiatric (depression, anxiety, PTSD)
- Neurological (Alzheimer's, Parkinson's, post-stroke)
- Endocrine (hyperglycemia)
- Medications (psych meds, glucocorticoids, beta-agonists, anti-cholinergics)

Acute Management

1. Identify and address medical causes for difficulty sleeping.
2. Address environmental factors (reduce noise, lighting).
3. Consider medications (e.g. zopiclone 3.75-7.5mg PO).

Preventative Management (for future nights)

1. Give last dose of stimulating meds earlier in the evening.
2. Advise sleep hygiene (regular sleep schedule, avoid daytime naps, avoid caffeine and alcohol).

FALL

On Arrival

1. Clear C-spine. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Altered LOC? See *Decreased LOC* (pg 10).

History & Physical - Don't miss

Hx: LOC, head injury, chest pain, SOB, palpitations, recent med changes, PMH (seizures, arrhythmia, DM, stroke, TIA).
O/E: Orthostatic vitals with temp, mental status, neuro, hip, knee.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Cardiac (MI, arrhythmia)	Cardiac RFs, CAD, chest pain, palpitations, SOB	Lytes, ECG, serial troponin, telemetry
Stroke/TIA	Focal neurological signs	CT Head
PE	PERC, Wells Criteria for PE	D-dimer → CT-PA
Hypoglycemia	Insulin or oral hypoglycemics, decreased PO intake, light-headed	Accucheck
Hypovolemia	Diuretic use, renal disease, vomiting, diarrhea, tachycardia	Lytes, Cr, BUN

Common Causes
Mechanical, sedative/alcohol use, sensory disturbance, orthostasis, stroke/TIA.

Comprehensive Approach
CNS, Vestibular, Cardiovascular, MSK, Metabolic
Tests to consider: Serum tox screen, Dix-Hallpike

Acute Management

1. Rule out fractures. Be alert to signs of internal hemorrhage.
2. Seek and treat primary cause of fall.
3. Notify substitute decision makers/next of kin of the incident and what's being done to prevent recurrences.

FEVER

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Order CBC and Urinalysis.
3. Draw blood cultures x 2 and urine culture before administering abx.

History & Physical - Don't miss

Hx: Fever onset and duration, lines/surgical sites, resp symptoms, urinary symptoms, bowel symptoms, recent travel.
O/E: Vitals, cardiac, resp, skin for ulcers and wounds.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Sepsis	Tachycardia, altered mental status, hypotension	Blood/urine C&S, TREAT EARLY
Pneumonia	Shortness of breath, cough	CXR, sputum/blood C&S
Osteomyelitis	Bone pain, swelling or erythema	X-ray, ESR/CRP, MRI
Pyelonephritis	Dysuria, frequency, hematuria, CVA tenderness	Urine dip, C&S, U/S
Endocarditis	Injection drug use, indwelling lines, central line, Dukes criteria	Blood cultures, CBC, CXR, ECG, ECHO
Meningitis	Headache, meningismus	LP
Tropical disease	Recent travel	malaria screen
Hyperthermia	Heat exposure, rec drug use	Tox screen
Malignancy	Hx malignancy, night sweats, weight loss, lymphadenopathy	CBC-d
DVT/PE	Wells criteria for PE, Wells criteria for DVT	D-dimer, Doppler leg scan, CT-PA
Connective tissue diseases	Hx of SLE, RA, vasculitis, GCA, JRA, weight loss, inflamed joints	ESR, CRP, ANA, RF

Common Causes
Infection, rheumatologic diseases, malignancy, thrombosis, thyroiditis

Acute Management

1. See *Cause-Specific Management* (pg 28-30).
2. Consider empiric abx. Antipyretics for comfort.

HEADACHE

On Arrival

1. ABCs. Is there decreased LOC? See *Decreased LOC* (pg 10).
2. If suspicious, consider availability of respiratory support and/or CT head and/or neurology/neurosurgery consult.

History & Physical - Don't miss

Hx: Onset (sudden vs. gradual), severity, quality, radiation, trigger, trauma, neuro signs (e.g. vision, weakness), PMH (migraines, stroke, cancer, immunodeficiency), meds.
O/E: Vitals, appearance, neuro (inc. meningism and papilledema).

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
SAH	Altered LOC, "thunder-clap" h/a, focal neuro	CT head ± CTA, INR, PTT, LP
Sub- or epidural hematoma	Trauma, altered LOC, focal neuro	CT head, CBC, INR, PTT
Temporal arteritis	>50y, scalp tender, jaw claud.	ESR, temporal art. Bx
Meningitis	Altered LOC, meningismus	CT head, LP
Intracranial tumour	Focal neuro, N/V, papilledema, seizures	CT head, MRI
Hypertensive encephalopathy	sBP > 200, confusion, N/V, papilledema, edema	CT head or MRI to rule out PRES
Angle-closure glaucoma	Visual disturbance, shallow AC, IOP, red eye	Gonioscopy, tonometry

Common Causes
Tension, migraine, caffeine withdrawal, rebound.

Comprehensive Approach
Infectious (meningitis, encephalitis), vascular (intracranial bleed, GCA, HTN), tumour (lung, breast, melanoma), benign (tension, migraine, cluster).

Acute Management

See *Cause-Specific Management* (pg 28-30). Pain meds as needed.

HEMATEMESIS

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Is there adequate IV access for resuscitation? Estimate blood loss.

History & Physical - Don't miss

Hx: Coffee-ground vs. bright red, presyncope/syncope, melena/ hematochezia, epigastric/ abdo/chest pain, meds (heparin, warfarin, anti-platelet), PMHx (coagulopathy, PUD/H. Pylori, cirrhosis, EtOH), last meal.
O/E: Postural vitals, volume/perfusion status, abdo exam (inc. stigmata of liver disease), DRE, H&N exam (epistaxis, telangiectasias).

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Peptic ulcer	Epigastric pain, NSAIDs/ASA	Endoscopy
Esophageal varices	Liver disease, jaundice, ascites, caput medusae	LFTs, abdo US, endoscopy
Mallory-Weiss tear	Hx profuse vomiting/retching	Endoscopy
Neoplasm	Constitutional sx, dysphagia	CXR, endoscopy
Aortoenteric fistula	AAA, PVD bypass	Endoscopy, angiography
Vascular ectasias (e.g. AVM)	Possible FHx	Endoscopy

Acute Management

Hematemesis is a medical emergency. Hemodynamic instability is common. All patients should be worked-up with endoscopy within 24h.

1. NPO, CBC q4-6h, NG tube, cross-match, 2 large bore IVs/
2. Fluid replacement (transfusion if Hb <70 and/or symptomatic).
3. PPI (pantoprazole 80 mg IV bolus followed by 8 mg/h infusion for 72h).
4. Octreotide if concern for varices.
5. Abx prophylaxis if ascites present.
6. Stop anti-coagulants/anti-platelets. Reverse warfarin (Octaplex, Vit K).
7. See *Cause-Specific Management* (pg 28-30).

HYPERCALCEMIA

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Is the patient truly hypercalcemic? (correct for albumen level).
3. Is the patient volume depleted? (assess volume status, IV fluids if needed).

History & Physical - Don't miss

Hx: Time course, confusion, abdominal pain, N/V, MSK pain, polyuria, PMHx (renal calculi, malignancy/cancer screening, sarcoidosis, TB).
O/E: Vitals, orthostatic changes, volume status.

Differential Diagnosis

	H&P Features	Tests to Consider
Primary hyperparathyroidism	50% asymptomatic	PTH
Malignancy	History of cancer, fever, wt loss, night sweats, smoker	Targeted imaging, SPEP, UPEP
Drugs	History of lithium, thiazides, theophylline use	Serum lithium level
Hypervitaminosis D, milk alkali syndrome	History of excess vitamin D or calcium intake	25-(OH)D, 1,25-(OH)D
Immobilization	Prolonged hospital stay	None
Thyrotoxicosis	Tremor, tachycardia, diaphoresis, goitre	TSH, Free T4/T3
Granulomatous Disease	History of lymphoma, sarcoidosis, TB, resp sx's	CXR

Common Causes
Primary hyperparathyroidism and malignancy account for 90% of cases.
Tests to consider: CBC, Cr, BUN, total calcium, ionized calcium, alb, phosphate, PTH, PTHrP, 25-(OH)D, 1,25-(OH)D, SPEP, UPEP, CXR.

Acute Management

1. IV N/S 300-500 cc/hr ± furosemide 20-40 mg IV if hypervolemic.

If Severe (obtunded or >3.5 mmol/L), add:

2. Calcitonin 4 IU/kg SC q12-24h.
3. Bisphosphonates: Pamidrone 30-90mg IV or Zoledronic Acid 4mg IV.
4. Dialysis is the treatment of last resort.

HYPERGLYCEMIA

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Does the patient have Type 1 or Type 2 Diabetes Mellitus?
3. Is there a precipitating factor? (see below)

History & Physical - Don't miss

Hx: History of diabetes, compliance with medications, infectious symptoms
O/E: Vitals, orthostatic changes

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Diabetic ketoacidosis (DKA)	Hx of T1DM, polyuria, polydipsia, nausea, vomiting, abdo pain, dehydration, decreased LOC, fruity smelling breath, Kussmaul's respiration	Serum glucose, lytes (Na^+↓3 : Glucose ↑10), serum osmolality, serum ketones, phosphate, ABG's, urine dip
Hyperosmolar hyperglycemic state (HHS)	Hx of T2DM, polyuria, polydipsia, decreased LOC, dehydration	Same as DKA

Comprehensive Approach
Approach: Precipitants of DKA (6 **I**'s):

- **I**nfection, **I**schemia/**I**nfarction, **I**atrogenic (glucocorticoids), **I**ntoxication, **I**nsulin missed, **I**ntra-abdominal process (pancreatitis).

Tests to consider: CBC, blood/urine cultures, CXR, ECG, Troponin, CK, amylase/lipase.

HYPERKALEMIA

On Arrival

❶ ABCs. Is this an emergency?
- If pt arresting, CALL Code Blue & give calcium chloride 1 AMP IV push.
- If pt unstable, ACT NOW (see below).

❷ Order Stat ECG.
- If there are ECG changes (eg. tall peaked T waves), ACT NOW.

❸ Verify that the sample is not hemolyzed, and no thrombo- or leukocytosis.
- If hyperkalemia is real and K $\geq$7.0 acutely, ACT NOW.

Actions

ACT 1: Stop any exogenous potassium or K-increasing medications.

ACT 2: Stabilize the myocardium
- If arresting, give calcium chloride 1 AMP IV push
- If ECG changes, unstable, or K $\geq$7.0 acutely, give calcium gluconate 1 AMP IV slow push over 5 min. NB: Caution in pts on DIGOXIN (can precipitate arrhythmia).
- Repeat in 10-15 min if ECG changes persist.

ACT 3: Shift the potassium into cells (if K $\geq$5.8 or ECG changes)
- D50W 1-2 amps IV push followed by Humulin R 10-20 Units IV push. Accucheck q20min x3 to watch for hypoglycemia.
- Ventolin 4-8 puffs STAT. NB: Caution for tachycardia.
- Sodium Bicarbonate 1-3 amps IV push over 5 min. NB: Caution in volume overloaded patients (CKD/CHF).
- May need to repeat shift in 2-4h. Recheck K and reshift as necessary.

ACT 4: Eliminate potassium from the body.
- Consider furosemide 40mg IV push plus 0.5-1L N/S over 1-2h (Consider volume state & renal function. Increase dose if CKD.)
- Consider dialysis, especially in pts already dialysis-dependent. Usually shifting will give you enough time to get dialysis ready.
- Kayexalate 30-90 g PO/PR, consider low-potassium diet.

Comprehensive Workup

Meds (K, NSAIDs, beta-blockers, digoxin, ACEi/ARBs, K-sparing diuretics).
↑K released from cells (tumor lysis, rhabdo, ischemia, hemolysis, DM1).
↓K excretion by kidneys (hypoaldosteronism, renal failure, distal RTA).

HYPERTENSION

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Repeat vitals and blood pressure in BOTH arms – isolated HTN?

History & Physical - Don't miss

Hx: Baseline blood pressure, BP this AM, BP yesterday evening.
O/E: Neuro exam (asterixis, papilledema).

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Intracranial bleed/ increased ICP	H/A, bradycardia, N/V, change in LOC	Fundoscopy, CT head
Acute stroke	Focal neurological signs	CT head
Aortic dissection	Sudden, tearing pain, may radiate to back, differential BP	CT chest
Sympathomimetics	↑HR, diaphoresis, mydriasis	Toxicology screen
Pheochromocytoma	Tachycardia, diaphoresis, pupillary constriction	CT abdo, urine and blood catecholamines
Preeclampsia	Pregnant	U/A

Common Causes
Missed medications, sympathetic nervous system activation (pain/stress).

Acute Management

1. Treat the hypertension if dangerous.
   - <u>Hypertensive emergency</u> (>180/120 with one of: papilledema, altered mental status, asterixis)
     Lower BP by no more than 25% (e.g. nitro patch + labetalol: 20mg IV then 0.5-2mg/min infusion [not in acute CHF])
   - <u>Hypertensive urgency</u> (sBP >210 or dBP > 120 with no evidence of end-organ damage)
     Lower BP to <160/100 over several hours using oral BP meds.
2. Treat the cause. See *Cause-Specific Management* pg 28-30.
3. Continue frequent BP monitoring.

HYPOGLYCEMIA

On Arrival

ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6). *Establish IV.*

History & Physical - Don't miss

Hx: Diabetes, hypoglycemic agents, insulin, alcohol.
O/E: Vitals, Mental Status Exam (GCS).

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Diabetic hypoglycemic episode	Recent Δinsulin/oral hypoglycemic, illness, ↓oral intake, misuse/abuse, neuroglycopenic/adrenergic sx	Blood glucose
Drug-Induced/toxic	ETOH use, access to drugs	Serum tox screen, urine tox screen
Insulinoma	Repeated episodes of hypoglycemia	
Adrenal insuff.	Wt loss, ↓BP , GI upset	electrolytes
Organ failure	Liver disease, starvation diet	Liver enzymes, LFTs
Sepsis	↑HR, ↓BP , altered mental status	CBC, Cr, lactate

Common Causes
Diabetic hypoglycemia - inpatients generally require less insulin than in outpatient setting.

Comprehensive Approach
Glucose supply (reduction in diet e.g. from hospitalization).
Glucose consumption (acutely ill, drugs).
Insulin supply (administration error, inappropriate regimen, insulinoma).

Acute Management

1. If patient can tolerate po intake:
   - 15 g oral carbohydrate if BG <4 mmoL, 20 g if BG <2 mmoL

   If patient cannot tolerate po intake:
   - 25 g D50W IV push (or glucagon 1 mg IM if IV access not available)
2. Recheck glucose and repeat q15 mins until BG >4 mmoL, then feed patient meal or snack within 30 minutes of hypoglycemic termination.
3. Consider modification to insulin dosing.

HYPOKALEMIA

On Arrival

❶ ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
❷ If symptomatic (muscle weakness, palpitations) treat immediately.
❸ If asymptomatic and K<3.0, order ECG. If abnormal, treat immediately.

History & Physical - Don't miss

Hx: Palpitations, n/v, constipation, muscle weakness, myalgia, mental status changes, PMH (renal disease, DM, hyperaldosteronism), meds (diuretics, insulin, beta-2 agonists, insulin).
O/E: Vitals, cardiac exam, arrhythmias/PVCs, muscle strength/ fasciculations, decreased reflexes, mental status.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Insulin overdose	On insulin	Accucheck
Diuretic overdose	On thiazide or furosemide, pills missing	Electrolytes, extended lytes
Beta-agonist overdose	On beta-agonist, tachycardic, diaphoretic, hypertensive	

Common Causes
Drugs (thiazides, loop diuretics, acetazolamide, epinephrine, decongestants, bronchodilators, insulin), Diarrhea/multiple enemas/laxative abuse, ileostomy losses.

Comprehensive approach: renal loss vs. GI loss vs shift into cells

Acute Management

❶ Treat the hypokalemia if dangerous.
- Mild/moderate hypokalemia (asymptomatic, $[K^+]$= 3.0-3.4 meq/L)
  KCl 20-100 meq/day PO (10meq KCl increases serum [K+] by ~0.1meq)
  (Also replace magnesium if low)
- Severe hypokalemia (symptomatic, $[K^+]$= <3.0 meq/L)
  Place on cardiac telemetry
  10-20 meq/hr K in NS and 60-80 meq PO daily (PO better than IV)
  Monitor lytes for rebound hyperkalemia (increased risk in renal disease)

❷ Treat the cause. See *Cause-Specific Management* (pg 28-30).

HYPOTENSION (see *Circulation* pg 6)

LEG PAIN

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Is there obvious trauma? Neurovascular compromise?

History & Physical - Don't miss

Hx: Pain history, constitutional symptoms, weakness, paraesthesias, bowel/bladder dysfunction, trauma, procedures, immobility, cardiac RFs, PMHx (Ca, PVD, DVT/PE), meds (anti-coags).
O/E: Vitals, LOC, peripheral vascular exam (ulcers, edema, rubor, temp, tenderness, pulses), resp, neuro, MSK (back, hip, knee).

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Acute limb ischemia	Hx vasculopathy, DM, 6 P's	ABI, U/S
Necrotising fasciitis	Pain out of proportion, subdermal emphysema	None (act quickly!)
Compartment syndrome	Hx trauma, out of proportion, 6P's, neurovasc compromise	Urgent ortho consult
Spinal cord compression	Urinary ret'n, fecal incont, saddle anaesthesia	MRI spine
DVT	Well's criteria, Unilateral swelling/pain	D-dimer, Doppler U/S, CT
Superficial thrombophlebitis	Erythema, tender, palpable venous cord	
Fracture	Hx trauma, swelling	X-ray
Osteomyelitis	Fever, functional loss, bone tenderness	CBC, ESR, blood C&S, probe, CT
Cellulitis	Local inflamm, DM, hx injury	CBC, Swab, blood Cx

Common Causes
MSK (e.g. cramps, strain, osteoarthritis, shin splints).

Comprehensive Approach
Infectious vs. Vascular vs. Neuro vs. Mechanical.

Acute Management

Treat cause. See *Cause-Specific Management* (pg 28-30).

NAUSEA/VOMITING

On Arrival

ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).

History & Physical - Don't miss

Hx: changes in mental status/LOC, chest pain, SOB, GI symptoms overdose/toxic ingestion.
O/E: Vitals, mental status, cardiac, abdo, gait, neuro.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Bowel obstruction	++abdo pain, distension, Hx abdo surgery	AXR, CT abdo
Peritonitis	Guarding, rebound tenderness	Abdo U/S
Meningitis	Fever, h/a, neck stiffness	LP
Cerebellar stroke	Dysmetria, gait ataxia	CT head
Intracranial bleed	Anticoagulant use, h/a, neurological deficits	CT head
MI	Hx CAD, cardiac RFs	ECG, serial troponins
↓ cardiac output (e.g. arrhythmia)	Hypotension, orthostasis	ECG
Diabetic ketoacidosis (DKA)	T1DM, abdo pain, ↓LOC, fruity smelling breath, Kussmaul's respiration	Serum glucose, lytes, osmolality & ketones, ABG's, urine dip
Adrenal insuff.	Wt loss, ↓BP , GI upset	Electrolytes

Common Causes
Gastroenteritis, opioid related N/V, vertigo, gastric ulcer.

Comprehensive Approach
CNS, Vestibular, Cardiac, GI.
Tests to consider: Serum tox screen, Dix-Hallpike.

Acute Management

1. NG tube if aspiration risk.
2. Ondansetron prn.
3. Treat cause. See *Cause-Specific Management* (pg 28-30).

SEIZURE

During Seizure Activity

1. Start timing seizure, perform jaw thrust to protect airway.
2. Protect pt from injury (i.e. remove sharps, cushion head, lay them onto ground/raise bed rails, do not insert anything into pt's mouth/airway).
3. Pay attention to seizure characteristics (focal vs. generalized, LOC).
4. If seizure lasts >5 min, treat. (See Acute Management below).

History & Physical - Don't miss

Hx: Prev seizures, anti-sz non-adherence, FHx, drug/EtOH dependence, pregnancy, immunocompromise.
O/E: Vitals, full neuro exam, mental status and pupils, fundoscopy, MSK (fractures, shoulder dislocation), incontinence, inspect tongue.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
CNS infection	Fever, meningismus	CT head/LP
Drug withdrawal	EtOH/benzo dependence	CIWA protocol, GGT
Metabolic disturbance	Hyponatremia, See also: *Hypoglycemia, Hypercalcemia*	Accucheck, lytes, extended lytes
Stroke (hem. > ischemic)	Focal neuro deficit (NB: isolated motor deficit is likely a Todd's paresis)	CT head
Tumour	H/A, sz recurrences	CT head

Common Causes
Medication non-adherence, CNS pathology, metabolic, toxicities.

Comprehensive Approach
Generalized (GTC, Absence, myoclonic, atonic) vs Partial (simple, complex).
Tests to consider: CBC, lytes, Cr, glu, anti-sz drug level, LP, tox screen.

Acute Management

1. Treat underlying cause (e.g. glucose, electrolyte imbalance).
2. *Spontaneously resolving*: lay pt on their side, re-orient, investigations.
3. *Persistent (>5 mins):* Accucheck, O2, IV access, cardiac monitor.
   1st line: BZD (lorazepam 0.1mg/kg IV @ 2mg/min).
   2nd line: phenytoin (20mg/kg IV, can add 10mg/kg if still seizing).
   3rd line: Phenobarbital (10-20mg/kg IV loading dose).

TACHYCARDIA

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. O_2 supplementation, IV access, cardiac monitor.
3. Obtain 12-lead ECG (wide vs. narrow QRS).
4. If unstable follow ACLS (unstable = new onset of ↓BP, C/P, SOB, or ↓LOC).

History & Physical - Don't miss

Hx: Palpitations, fatigue, presyncope, dyspnea, FHx of arrhythmias/sudden death, hypovolemia, infection/sepsis, cardiac RFs, PMHx (CAD, MI).
O/E: Vitals (RR, BP, SpO_2), precordial exam, PMI, JVP.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Arrhythmias	Sycope/presyncope	ECG
PE/DVT	Chest pain, SOB, Well's criteria	D-dimer, CT-PE
Shock (septic or hypovolemic)	Hypotension, diaphoretic, cool extremities, n/v	Shock workup (see *Circulation*)
Electrolyte abnorm.	Severe muscle weakness	ECG, electrolytes
Drug withdrawal	EtOH/benzo/opioid dependent	CIWA protocol, GGT
Sympathomimetics	Agitation, hypertension, wide pupils, diaphoretic	Medication review
Thyroid storm	Abrupt, severe hyperthyroid sx, altered mental status	TSH, Free T4 & T3, RAI

Common Causes
Pain, Atrial fib/flutter.

Comprehensive Approach
Sinus rhythm (Pain, shock, PE, meds) vs Tachyarrhythmia → Narrow QRS (SVT) vs Wide QRS (VTach, Vfib, SVT with aberrancy, PVCs, Torsades).

Acute Management

1. Treat cause. See *Cause-Specific Management* (pg 28-30).
2. Appropriate pain management. Reassurance if pt is anxious.

Before You Leave

Does this pt need a monitored bed (with telemetry)?

URINARY RETENTION

On Arrival

1. ABCs/vitals. If vitals compromised, go to *ABCs* (pg 3-6).
2. Note: BladderScans are notoriously inaccurate outside of the Post-Void Residual setting. Treat patient discomfort rather than a number.

History & Physical - Don't miss

Hx: Last void, fecal incontinence, saddle anaesthesia, neurological history (autonomic dysreflexia, detrusor-sphinter dyssynergy), previous urinary symptoms, PMH (surgeries/catheterizations/GU infections/urolithiasis/trauma/CNS lesion/pelvic mass/cancer), meds (anticholinergics).
O/E: Vitals with temp, abdo, neuro, CVA tenderness, DRE.

Differential Diagnosis

Urgent/Emergent Causes (rule out)

	H&P Features	Tests to Consider
Cauda equina syndrome	Saddle anaesthesia, fecal incontinence, decreased anal tone, bilateral leg weakness or hyperreflexia	MRI STAT (act quickly!)
Anticholinergic overdose	Dilated pupils, dry mucosa, headache, HTN, tachycardia	ECG
Fixed outflow obstruction	Enlarged prostate on DRE, Hx BPH/prolapse/pelvic ca, trauma	

Common Causes
Meds (anticholinergic), BPH, Constipation, UTI.

Comprehensive Approach
GU (outflow obstruction), GI (fecal impaction, pelvic mass), neurologic (bladder sphincter and/or urethral sphincter dysfunction), medications (anticholinergics, pseudoephedrines)
Tests: CBC, lytes, Cr, BUN, urine R&M, urine C&S, bladder U/S.

Acute Management

1. Rule out urethral trauma (blood at meatus, high-riding prostate).
2. Insert Foley catheter:
   - If drains >200 cc, leave in place during causal workup.
   - If <200cc consider removing, may have been false alarm.
3. Treat cause. See *Cause-Specific Management* (pg 28-30).

ACUTE CAUSE-SPECIFIC MANAGEMENT

Acute limb ischemia	UF Heparin (5000 IU bolus + infusion), urgent arteriography (Int. Radiology)
Alcohol withdrawal	CIWA protocol (diazepam or lorazepam), thiamine
Anaphylaxis	epinephrine 0.3 mg IM q5min, diphenhydramine, ranitidine, salbutamol, steroids, ± intubation
Angle-closure glaucoma	IOP reducing drops, systemic osmotic drugs, iridotomy (Ophtho consult)
Aortic dissection	Beta-blocker first, then Nitroprusside to lower BP. Urgent Vascular Surg consult.
Aortoenteric fistula	Urgent Vascular Surg consult.
Angina	ASA 160 mg chewed, nitroglycerin 0.4 mg SL
Anticholinergic overdose	ACLS, place on cardiac monitor, physostigmine (with atropine at the ready)
Arrythmias	If unstable, follow ACLS protocol. If stable, place on telemetry and consider cardioversion
Asthma exacerb'n	Salbutamol & ipratropium (4 puffs q20min). Prednisone 50mg PO. Consider MgSO4, intub'n, ICU
Autonomic dysreflexia	Foley catheterization. Sit patient upright Lower BP as needed with nitrates, nifidepine, captopril, hydralazine or labetolol
Peptic ulcer	IV PPI, endoscopy->embolization->surgery
Bowel obstruction	NG decompression, NPO. Consult GenSurgx
Brain Tumour	Monitor neuro vitals, dexamethasone, urgent referral for chemo/rad/surg
Bronchospasm	Nebulized salbutamol & ipratropium (5 mg q20min), (0.5 mg q20min). Consider steroids, $MgSO_4$, intubation.
Cardiac arrest	Call CODE BLUE, start CPR ACLS protocol
Cardiac tamponade	IV crystalloid bolus (1-2 L) Pericardiocentesis
Cauda equina syndrome	Foley catheterization Urgent consult for surgery (NeuroSurg) or radiation (RadOnc)
Cellulitis	IV cefazolin, then PO cefalexin when going home
CNS vasculitis	Prednisone 1mg/kg per day, treat cause
Compartment synd.	Fasciotomy (OrthoSurg)
COPD exacerbation	Sulbutamol & ipratropium (4 puffs each q30min), prednisone 50 mg PO, Abx (ceftriaxone+azithro, or flq), CPAP/BiPAP, consider intubation

Delirium	Orienting stimuli. Treat underlying cause
DKA	Rehydration, potassium, insulin (not if K^+ <3.3 mmol/L) See *Hyperglycemia* (pg 18)
DVT	LMWH bridge to warfarin
Encephalitis	IV acyclovir + abx
Endocarditis	IV antibiotics
Epidural hematoma	See *Intracranial Bleed*
Esophageal varices	ICU, pantoprazole, octreotide, endoscopy->TIPS
Fixed urethral outflow obstruction	Foley catheterization. NB: If urethral trauma, blood at meatus, consult Urology before Foley catheterization.
Fracture	Cast/splint vs. ORIF, consider LMWH & Abx
Heart failure	BiPAP or intubation, search for cause, normotensive -> nitrates & furosemide, hypotensive -> vasopressors if diastolic HF, inotropes if systolic HF or unknown
Hemoptysis	expectant->bronchoscopy->embolization
Hydrocephalus/acute elevated ICP	elevate head of bed to 30°, prevent hypotension, treat if ICP > 20mmHg (mannitol 20% 1-1.5g/kg then 0.25g/kg q6h to serum osmolality of 315-320)
Hypoglycemia	see *Hypoglycemia* (pg 21)
Hypokalemia	see *Hypokalemia* (pg 22)
Hypovolemia	IV crystalloid bolus (1-2L), Encourage fluid intake
Intracranial bleed	Drainage, craniotomy (NeuroSurg)
Ischemic bowel	IR consult for angiography ± thrombolysis
Mallory-Weiss tear	Expectant -> surgery
Meningitis (Bacterial)	Isolate, monitor ABCs & LOC Empiric IV abx (after LP & blood culture): ceftriaxone +vancomycin (+ampicillin if age > 50) +dexamethasone
Metabolic acidosis	Seek cause and treat accordingly
MI	ASA 160 mg chewed
1) STEMI	Urgent PCI or thrombolysis
2) NSTEMI	Nitroglycerin 0.4 mg SL. Beta-blocker, LMWH, clopidogrel, morphine, O_2
Migraine	NSAIDS -> Triptans or ergots -> metoclopramide
Opioid overdose	Stop opioid, oral/nasal airway, start B&M ventilation. Opioid reversal with naloxone if no improvement.
Osteomyelitis	IV antibiotics, imaging, consider surgical debridement
Pericarditis	NSAID (ibuprofen 600-800 mg TID) x 7-14d, colchicine Treat underlying disease

Peripheral neuropathy	AAT, gabapentin/pregabalin, opioid
Pneumonia	ceftriaxone+azithromycin, or respiratory fluroquinolone, O_2 if needed
Pneumothorax	Needle decompression if hypotensive, chest tube
Pulmonary edema	See *Heart Failure* (pg 29)
Pulmonary embolus	LMWH bridge to warfarin Consider thrombolysis if hemodynamic compromise (tPA 100 mg over 2 hrs or catheter directed if available)
Pyelonephritis	IV fluoroquinolone (e.g. ciprofloxacin), IV fluids
Seizure	see *Seizure* (pg 25)
Sepsis	Search for focus of fever, start empiric antibiotics, fluids/pressors, consider ICU transfer
Shock:	
1) Anaphylactic	IV crystalloid bolus (1-2L) See *Anaphylaxis*
2) Cardiogenic	Ionotropes (dobutamine, ephedrine), intra-aortic balloon pump, angioplasty
3) Hemorrhagic	Stop bleeding (consult GenSurg, IR) IV N/S bolus 3:1 estimated fluid loss. pRBCs + Plts, cryo if > 4-5 Units
4) Septic	IV crystalloid bolus + broad spectrum abx See *Sepsis*
Stroke/TIA	CODE STROKE, urgent CT head to r/o hemorrhage, establish IV access
1) Ischemic	ASA, thrombolysis (rt-PA) within 4.5hrs of onset if not contraindicated
2) Hemorrhagic	Antihypertensives, consult Neurosurgery
Subarach. hemorr.	See *Intracranial Bleed* (pg 29)
Subdural hemat.	See *Intracranial Bleed* (pg 29)
Superficial thrombophlebitis	RICE, NSAIDs, LMWH (most evidence is for fondaparinux)
Temporal arteritis	Prednisone 40-60mg po daily x 4wks. If visual Sx, consider high dose IV
Trauma	ABCs See *ATLS Protocol* (Appendix 1)
Tension pneumothorax	Unstable: Needle decompression 2nd intercostal space mid clavicular line Stable: Chest tube 4/5th intercostal space ant. axillary line (Consult Thoracic Surg)
Toxic Megacolon	Resuscitative measures. NPO. Blood products if indicated. Broad spectrum antibiotics IV and steroids IV. Consults to General Surgery, GI, and/or ID

DOCUMENTATION

Every call should be documented in the patient's chart.

The following information should be included:

1. **Date & Time**
2. **Asked to see patient by ______**
3. **Reason for the call**
4. **Addressing the call** (SOAP note format)
   - Subjective: info provided by nurse, symptoms reported by patient, pertinent positives and negatives related to complaint – narrow your ddx.
   - Objective: focused **exam** addressing the complaint, include **vitals** and condition (**stable vs. unstable**), physical exam and any recent labs/investigations relevant to the present complaint/concern.
   - Assessment: state your **provisional diagnosis** and/or **differential diagnosis**.
   - Plan: clearly state your plan to address the concern: new **investigations**, immediate **management**, plans for future management.
   - Any action taken during the call -> treatments/procedures, etc.
   - Discussion of treatment options with pt/family.
5. **Orders**: enter orders for investigations/management, clearly state conditions by which nurses should call you for the same or new issues (e.g. *maintain O_2 sats $\geq$95% with O_2 by nasal prongs, call MD if $<$95% with O_2 $>$3l/min*), notify the pt's nurse that you have left new orders.
6. **Sign and legibly print**: name, designation (CC/PGY), pager #
7. ± discussed with Dr. ______ (senior/staff)