Internal Medicine Made Easy

Student Handbook Edition

A Life-Coherent Guide to Clinical Reasoning, Physiology, and Healing

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Clinical reasoning from danger to repair

Purpose of this edition

This student handbook condenses the full textbook into a practical companion for bedside learning, case discussion, ward work, on-call reasoning, and examination preparation. It preserves the central life-coherent clinical loop while reducing the material into high-yield cards, checklists, scripts, and practice prompts.

Educational use notice

This handbook is educational. It is not a prescribing guide, emergency protocol, or substitute for professional supervision, local protocols, specialist consultation, current authoritative guidance, or direct patient care. Students and clinicians must use local standards and seek help early when patients are unsafe or deterioration is possible.

AI use disclosure

This student handbook was prepared from the full manuscript with generative AI assistance under the authorial direction and final responsibility of Dr. Bichara Sahely. It is intended as a learning companion, not as an independent clinical authority.

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1. How to Use This Student Handbook

The full textbook teaches the whole architecture. This handbook is for use when you need a clear way to think at the bedside or while preparing for a case discussion. Its job is to make Internal Medicine less scattered without pretending that it is simple.

Before seeing a patient

- Read the relevant presentation card.
- Write the danger list before the diagnosis list.
- Prepare one sentence that explains the syndrome.

During the encounter

- Ask what is unsafe now.
- Listen for the patient's baseline, function, medicines, and worries.
- Avoid closing on a diagnosis before dangerous alternatives are considered.

After the encounter

- Write the capacity failure: what can the patient no longer sustain?
- Write the coupling conditions: what keeps the problem going?
- State what repair should look like and when reassessment is needed.

For exams and case presentations

- Use the loop as your organizing grammar.
- Prioritize likely, dangerous, treatable, and context-specific causes.
- Show that your plan includes monitoring, communication, and safety-netting.

2. The Core Clinical Loop

The central habit is simple enough to remember and strong enough to hold complexity:

Danger -> Syndrome -> Capacity Failure -> Coupling Conditions -> Wise Perturbation -> Repair Trajectory

Danger

What must not be missed now or soon?

Syndrome

What pattern of symptoms, signs, time course, severity, and context is present?

Capacity Failure

What can the patient no longer sustain: oxygenation, circulation, clearance, energy, cognition, mobility, comfort, agency, dignity, or participation?

Coupling Conditions

What patient, medicine, family, social, environmental, or system factors shape deterioration or recovery?

Wise Perturbation

What action is likely to help more than harm for this patient at this time?

Repair Trajectory

How will we know the patient is genuinely safer, clearer, stronger, more comfortable, or better supported?

3. Danger-First Medicine

Danger-first medicine is calm, disciplined attention to what would be unsafe to miss. It is not panic and it is not defensive medicine. It is the moral and clinical starting point of safe care.

- Airway compromise or inability to protect airway
- Hypoxia, severe breathlessness, rising oxygen requirement, or ventilatory failure
- Shock, severe dehydration, severe bleeding, or collapse
- Sepsis or rapidly worsening infection
- Acute coronary syndrome, aortic dissection, pulmonary embolism, or life-threatening arrhythmia
- Stroke symptoms, seizure, reduced consciousness, meningitis, or acute spinal cord syndrome
- Severe hypoglycemia, DKA/HHS, hyperkalemia, severe hyponatremia, or other dangerous metabolic disturbance
- Major medicine toxicity, anticoagulant bleeding, opioid/sedative harm, severe allergy, or immunosuppression risk
- Suicidal intent, serious self-harm risk, abuse, neglect, coercion, or safeguarding danger
- Unsafe discharge because function, cognition, medicines, follow-up, or support cannot hold the remaining risk

The danger sentence

- “I am worried about ___ because ___, and the immediate safety step is ___.”
- Students should learn to say this early and clearly.

4. Symptoms to Syndromes

A symptom is what the patient reports. A syndrome is the clinically useful pattern you construct from the story, examination, trajectory, risk, and context. A diagnosis is one possible explanation for the syndrome.

Chest pain

Possible syndrome statements: central pressure with diaphoresis in a diabetic patient; pleuritic pain with sudden dyspnea; tearing pain radiating to the back.

Dyspnea

Possible syndrome statements: acute hypoxic dyspnea with fever; progressive dyspnea with edema and orthopnea; sudden dyspnea with pleuritic pain.

Confusion

Possible syndrome statements: acute fluctuating inattention in an older person after infection, sedatives, dehydration, constipation, or pain.

Fatigue

Possible syndrome statements: pale and breathless on exertion; sleepy with poor sleep; exhausted after infection; low mood with loss of agency.

Abdominal pain

Possible syndrome statements: severe generalized pain with shock; right upper quadrant pain with jaundice; epigastric pain with vomiting; lower abdominal pain with urinary symptoms.

5. Capacity Failure and Coupling Conditions

The disease label matters, but it is not enough. The student must learn to ask what the illness is doing to the patient's capacity to live and what surrounding conditions make repair harder.

- Oxygenation and ventilation
- Circulation and perfusion
- Clearance, fluid balance, electrolytes, and medicine safety
- Energy transformation and nutrition
- Defense against infection and immune tolerance
- Repair and remodeling
- Regulation, coordination, cognition, and sleep
- Mobility, comfort, agency, dignity, and participation

Common coupling conditions

- Frailty, baseline function, cognition, and falls risk
- Chronic kidney disease, heart failure, diabetes, COPD, liver disease, pregnancy, or immunosuppression
- High-risk medicines, drug interactions, recent medicine changes, adherence barriers, and deprescribing opportunities
- Hydration, nutrition, constipation, urinary retention, pain, sleep disruption, mood, alcohol, or substance use
- Health literacy, finances, transport, housing, work, caregiver support, family strain, and follow-up access
- Hospital pressures, delayed tests, unclear ownership of pending results, poor handover, and fragmented responsibility

6. Wise Perturbation and Repair

Every clinical action is a perturbation introduced into a living system. The same action can heal or harm depending on the patient, context, timing, dose, monitoring, and goals.

Wise perturbation asks

- Is there a clear indication?
- Is the action proportionate to benefit and burden?
- Can response and harm be monitored?
- Does the patient or caregiver understand the plan?
- What should be held, stopped, restarted, reduced, or escalated?

Repair trajectory asks

- What should improve first?
- What could get worse because of treatment?
- What would change the diagnosis or plan?
- Who owns follow-up, pending results, and safety-netting?
- Is the patient safer in the next setting of care?

7. Core Presentation Cards

The Sick Patient

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Airway, breathing, circulation, consciousness, glucose, sepsis, bleeding, dangerous rhythm, severe pain.

Syndrome pattern

- Looks unwell, abnormal vital signs, rapid change, or staff/family concern.

Capacity at risk

- Perfusion, oxygenation, cognition, clearance, comfort.

Initial wise actions

- Call for help early; ABCDE; check glucose; review vitals trend; secure IV access if appropriate; urgent investigations according to local pathway.

Repair and reassessment

- Response to initial stabilization; trend vitals, urine, mental state, pain, oxygen requirement; document escalation plan.

Common student pitfalls

- Waiting for a diagnosis before treating danger.

Chest Pain

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- ACS, aortic dissection, pulmonary embolism, pneumothorax, pericarditis/tamponade, sepsis, severe hypertension.

Syndrome pattern

- Site, character, radiation, onset, triggers, autonomic symptoms, dyspnea, pleuritic features, risk factors.

Capacity at risk

- Circulation, oxygenation, perfusion, comfort, agency.

Initial wise actions

- ECG early; vital signs; oxygen only if indicated; analgesia; senior help for unstable or high-risk features; local chest pain pathway.

Repair and reassessment

- Repeat assessment, ECG/troponin timing per local protocol, pain response, rhythm, blood pressure, oxygenation.

Common student pitfalls

- Calling atypical pain “non-cardiac” too soon.

Dyspnea

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Hypoxia, asthma/COPD crisis, pulmonary edema, PE, pneumothorax, pneumonia/sepsis, acidosis, neuromuscular weakness.

Syndrome pattern

- Acute/chronic, wheeze, crackles, edema, fever, chest pain, orthopnea, exposure, anxiety, baseline lung/heart disease.

Capacity at risk

- Oxygenation, ventilation, circulation, energy, mobility.

Initial wise actions

- Assess work of breathing; pulse oximetry; oxygen target per local guidance; CXR/ECG/labs as appropriate; treat likely reversible danger.

Repair and reassessment

- Oxygen need, respiratory rate, speech, mental state, response to bronchodilator/diuretic/antibiotic as applicable.

Common student pitfalls

- Reassured by normal saturation while work of breathing is high.

Fever

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Sepsis, meningitis, pneumonia, pyelonephritis, cellulitis/necrotizing infection, cholangitis, neutropenic sepsis, malaria/travel illness.

Syndrome pattern

- Temperature plus source symptoms, immune status, travel, devices, antibiotics, rash, neck stiffness, hypotension, confusion.

Capacity at risk

- Defense, circulation, cognition, hydration, clearance.

Initial wise actions

- Sepsis screen if unwell; cultures before antibiotics if this does not delay care; source search; fluids carefully; local antimicrobial policy.

Repair and reassessment

- Vitals, lactate if used locally, urine output, mental state, fever curve, source control, culture results.

Common student pitfalls

- Treating fever number without source, severity, or host risk.

Fatigue

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Anemia/bleeding, heart failure, renal failure, endocrine crisis, malignancy, severe depression/suicidality, post-infective deterioration.

Syndrome pattern

- Energy loss with sleep, mood, dyspnea, weight, pain, bleeding, infection, medicines, function.

Capacity at risk

- Energy transformation, oxygen delivery, participation, agency.

Initial wise actions

- Look for red flags; basic labs guided by context; medicine review; assess sleep, mood, function, nutrition.

Repair and reassessment

- Functional trajectory, symptom burden, reversible causes, safety-net for weight loss, bleeding, dyspnea, worsening.

Common student pitfalls

- Dismissing fatigue as psychological before danger is checked.

Edema

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Acute heart failure, nephrotic syndrome, severe renal/liver failure, DVT, cellulitis, medication harm.

Syndrome pattern

- Localized vs generalized, time course, dyspnea, orthopnea, urine, albumin/liver signs, calf pain, medicines.

Capacity at risk

- Circulation, clearance, mobility, skin integrity, comfort.

Initial wise actions

- Assess volume status; vitals; urine; renal/liver/albumin tests; consider cardiac/venous causes; review medicines.

Repair and reassessment

- Weight, edema, breathlessness, renal function, electrolytes, skin, mobility.

Common student pitfalls

- Giving diuretics without knowing whether edema is congestion, venous, renal, hepatic, or medicine-related.

Syncope

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Arrhythmia, ACS, PE, aortic stenosis, GI bleed, seizure, ectopic pregnancy where relevant, hypoglycemia.

Syndrome pattern

- True transient loss of consciousness, posture, prodrome, exertion, palpitations, injury, recovery, medicines.

Capacity at risk

- Cerebral perfusion, circulation, safety, mobility.

Initial wise actions

- ECG; orthostatic vitals where appropriate; glucose; review high-risk features and medicines; senior review if cardiac features.

Repair and reassessment

- Recurrence, rhythm monitoring if indicated, injury risk, cause addressed, driving/work advice per local rules.

Common student pitfalls

- Calling it “vasovagal” without ECG and high-risk screen.

Confusion

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Delirium from sepsis, hypoxia, hypoglycemia, stroke, medication toxicity, withdrawal, intracranial bleed, urinary retention, constipation.

Syndrome pattern

- Acute fluctuating attention change, baseline cognition, triggers, sleep, pain, infection, medicines.

Capacity at risk

- Cognition, agency, mobility, dignity, safety.

Initial wise actions

- Check glucose, oxygen, vitals; review medicines; search reversible causes; obtain baseline from family/caregiver; minimize restraints/sedatives.

Repair and reassessment

- Attention, sleep-wake cycle, mobility, hydration, pain, bowels/bladder, family input.

Common student pitfalls

- Assuming dementia or “non-compliance” when delirium is present.

Headache

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- SAH, meningitis, encephalitis, temporal arteritis, raised ICP, stroke, hypertensive emergency, acute glaucoma.

Syndrome pattern

- Thunderclap, fever, neck stiffness, neuro deficit, visual symptoms, age/new pattern, immunosuppression, pregnancy/postpartum.

Capacity at risk

- Neurological function, comfort, vision, cognition.

Initial wise actions

- Red flag screen; neuro exam; urgent imaging/labs/senior input when high-risk; treat pain safely.

Repair and reassessment

- Pain response, neuro status, fever, vision, return precautions.

Common student pitfalls

- Treating a new severe headache as migraine without red flag review.

Abdominal Pain

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Peritonitis, AAA, ischemic bowel, perforation, pancreatitis, obstruction, ectopic pregnancy where relevant, sepsis, GI bleed.

Syndrome pattern

- Location, onset, vomiting, bowels, urinary, gynecologic where relevant, fever, shock, guarding.

Capacity at risk

- Perfusion, clearance, nutrition, comfort, mobility.

Initial wise actions

- Vitals; abdominal exam; analgesia; labs/imaging guided by danger; surgical/gyne/urology input when needed.

Repair and reassessment

- Pain, vitals, abdomen, vomiting, urine, lactate if used, imaging results, ability to eat/drink.

Common student pitfalls

- Avoiding analgesia because it may “mask” signs.

Vomiting and Diarrhea

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Severe dehydration, shock, GI bleed, DKA, bowel obstruction, sepsis, toxic megacolon, electrolyte crisis.

Syndrome pattern

- Duration, blood, fever, pain, exposures, antibiotics, travel, intake, urine, frailty, pregnancy, diabetes.

Capacity at risk

- Hydration, electrolytes, clearance, energy, comfort.

Initial wise actions

- Assess dehydration and shock; glucose/ketones if diabetes; stool tests if indicated; careful fluids; infection control.

Repair and reassessment

- Urine output, electrolytes, glucose, oral intake, frequency of stool/vomit, frailty risk.

Common student pitfalls

- Missing medicine toxicity or DKA when vomiting dominates.

Weight Loss

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Malignancy, TB/HIV or chronic infection, hyperthyroidism, depression, inflammatory disease, malabsorption.

Syndrome pattern

- Intentional vs unintentional, appetite, fever/night sweats, bowel change, pain, mood, dysphagia, smoking, age.

Capacity at risk

- Nutrition, energy, immune resilience, participation.

Initial wise actions

- Confirm objective weight trend; red flag history/exam; directed investigations; nutrition and follow-up plan.

Repair and reassessment

- Weight trajectory, intake, function, investigation results, safety-net for bleeding, dysphagia, fever, pain.

Common student pitfalls

- Calling weight loss “poor appetite” without objective trajectory and red flag review.

Anemia

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Acute bleed, severe symptomatic anemia, hemolysis, malignancy, marrow failure, pregnancy-related risk where relevant.

Syndrome pattern

- Fatigue/dyspnea/pallor with MCV, retics, iron/B12/folate context, bleeding history, renal disease.

Capacity at risk

- Oxygen delivery, energy, circulation, mobility.

Initial wise actions

- Assess severity and hemodynamics; identify bleeding; review NSAIDs/anticoagulants; investigate pattern.

Repair and reassessment

- Symptoms, Hb trend, bleeding control, cause treated, medicine harm reduced.

Common student pitfalls

- Treating the number without explaining why anemia occurred.

Jaundice

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Cholangitis, acute liver failure, hemolysis, biliary obstruction, drug-induced liver injury, malignancy.

Syndrome pattern

- Yellow eyes/skin, dark urine, pale stool, itch, RUQ pain, fever, confusion, bleeding, alcohol/medicines.

Capacity at risk

- Transformation, clearance, coagulation, cognition, comfort.

Initial wise actions

- Assess for fever/pain/confusion/bleeding; LFT pattern; coagulation; imaging if obstructive features; urgent help for cholangitis/liver failure.

Repair and reassessment

- Mental state, fever, pain, INR/coagulation, bilirubin trend, source control.

Common student pitfalls

- Assuming all jaundice is hepatitis without obstruction and drug review.

Acute Kidney Injury

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Hyperkalemia, pulmonary edema, acidosis, uremia, obstruction, sepsis, shock, nephrotoxic medicine harm.

Syndrome pattern

- Creatinine rise/urine change with volume status, medicines, sepsis, obstruction symptoms, baseline CKD.

Capacity at risk

- Clearance, electrolytes, fluid balance, medicine safety.

Initial wise actions

- Check potassium and ECG if high; assess volume; urine output; bladder scan/obstruction; hold harmful medicines per local guidance; treat cause.

Repair and reassessment

- Creatinine, potassium, urine output, volume status, medicine restart plan, follow-up labs.

Common student pitfalls

- Ignoring stopped/restarted medicines at discharge.

Polyuria and Polydipsia

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- DKA/HHS, severe hyperglycemia, hypercalcemia, diabetes insipidus with dehydration, renal concentrating failure.

Syndrome pattern

- Thirst, urine volume, glucose, sodium, calcium, medicines, psychiatric water intake, pregnancy where relevant.

Capacity at risk

- Fluid balance, energy, electrolytes, cognition.

Initial wise actions

- Check glucose/ketones as appropriate; electrolytes; assess dehydration; directed endocrine/renal evaluation.

Repair and reassessment

- Intake/output, sodium, glucose, hydration, diagnosis clarity.

Common student pitfalls

- Assuming urinary frequency is always UTI.

Hyperglycemia

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- DKA, HHS, infection/sepsis, myocardial infarction, steroid-induced severe hyperglycemia, dehydration.

Syndrome pattern

- Glucose elevation with symptoms, ketones, osmolality context, infection, medicines, intake, diabetes type.

Capacity at risk

- Energy transformation, fluid balance, cognition, clearance.

Initial wise actions

- Check ketones/acid-base if indicated; fluids/insulin per protocol; search trigger; avoid overcorrection.

Repair and reassessment

- Glucose trend, ketones/acidosis, mental state, electrolytes, trigger control, education.

Common student pitfalls

- Treating glucose alone without asking why it rose.

Hypoglycemia

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Seizure, coma, fall, arrhythmia, recurrent hypoglycemia, sulfonylurea/insulin harm, poor intake, renal failure.

Syndrome pattern

- Low glucose with diabetes medicines, poor intake, alcohol, renal/liver disease, sepsis, adrenal risk.

Capacity at risk

- Brain energy, safety, cognition, mobility.

Initial wise actions

- Treat immediately per local pathway; identify cause; review insulin/sulfonylurea and meals; monitor recurrence.

Repair and reassessment

- Repeat glucose, mental state, food access, medicine adjustment, education, discharge safety.

Common student pitfalls

- Correcting the glucose but not changing the cause.

Hypertension

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Stroke, ACS, aortic dissection, pulmonary edema, encephalopathy, AKI, pregnancy emergency where relevant.

Syndrome pattern

- BP level plus symptoms, end-organ injury, chronicity, medicines, adherence, pain/anxiety, secondary causes.

Capacity at risk

- Circulation, brain, kidney, heart, vision.

Initial wise actions

- Distinguish emergency from urgency; look for end-organ damage; avoid rapid drops unless protocol indicates.

Repair and reassessment

- Symptoms, BP trend, organ function, medication plan, follow-up.

Common student pitfalls

- Treating an isolated number aggressively without context.

Shock

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Septic, hypovolemic, cardiogenic, obstructive, anaphylactic shock.

Syndrome pattern

- Hypotension or hypoperfusion: cold/clammy, confusion, low urine, tachycardia, lactate context, source clues.

Capacity at risk

- Perfusion, oxygenation, clearance, cognition.

Initial wise actions

- Call help; ABCDE; oxygen if needed; access; fluids carefully; identify shock type; antibiotics/bleeding/control/vasopressors per setting.

Repair and reassessment

- BP, perfusion, urine, mental state, lactate if used, oxygen, cause control.

Common student pitfalls

- Giving repeated fluids without considering cardiogenic/obstructive shock.

Palpitations

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Unstable tachyarrhythmia, AF with instability, VT, ACS, PE, thyrotoxicosis, electrolyte abnormality.

Syndrome pattern

- Fast/irregular beats with syncope, chest pain, dyspnea, duration, triggers, stimulants, medicines.

Capacity at risk

- Circulation, perfusion, comfort, safety.

Initial wise actions

- ECG during symptoms if possible; vitals; electrolytes/thyroid where indicated; urgent pathway if unstable.

Repair and reassessment

- Rhythm, rate, symptoms, triggers, anticoagulation decision if AF per local guidance.

Common student pitfalls

- Missing syncope or chest pain as high-risk features.

Weakness

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Stroke, spinal cord compression, Guillain-Barre, severe electrolyte disorder, hypoglycemia, sepsis, myasthenic crisis.

Syndrome pattern

- Focal vs generalized, acute vs chronic, sensory signs, reflexes, cranial nerves, pain, fever, medicines.

Capacity at risk

- Mobility, ventilation, agency, safety.

Initial wise actions

- Check glucose; neuro exam; urgent imaging/senior input for focal or cord signs; assess respiratory weakness if neuromuscular.

Repair and reassessment

- Strength, mobility safety, swallowing, breathing, cause addressed, rehab plan.

Common student pitfalls

- Calling weakness “deconditioning” before neuro and metabolic danger are checked.

Dizziness and Vertigo

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Posterior stroke, arrhythmia, GI bleed/anemia, hypoglycemia, vestibular neuritis with falls, medication hypotension.

Syndrome pattern

- Vertigo vs presyncope vs imbalance; onset; neuro signs; hearing; position; medications; orthostatic symptoms.

Capacity at risk

- Balance, cerebral perfusion, mobility, safety.

Initial wise actions

- Vitals including postural if suitable; ECG if presyncope; neuro/eye exam; fall risk; red flags for stroke.

Repair and reassessment

- Symptoms, gait, neuro signs, medication changes, safety-net.

Common student pitfalls

- Overdiagnosing benign vertigo without gait and neuro review.

Cough

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Pneumonia, PE, heart failure, asthma/COPD crisis, TB, malignancy, aspiration, medicine cause.

Syndrome pattern

- Acute/chronic, sputum, fever, dyspnea, hemoptysis, wheeze, reflux/postnasal drip, ACE inhibitor.

Capacity at risk

- Oxygenation, defense, sleep, comfort.

Initial wise actions

- Vitals and oxygen; chest exam; CXR if indicated; infection/airway/cardiac context.

Repair and reassessment

- Fever, oxygen, cough burden, sleep, response, red flags.

Common student pitfalls

- Giving repeated antibiotics for chronic cough without differential.

Hemoptysis

Use this card as a first-pass reasoning aid. It does not replace local protocols, senior review, or direct patient assessment.

Danger first

- Massive bleeding, PE, TB, malignancy, pneumonia, bronchiectasis, anticoagulant harm.

Syndrome pattern

- Blood amount, true hemoptysis vs hematemesis/epistaxis, dyspnea, fever, weight loss, anticoagulants.

Capacity at risk

- Airway, oxygenation, circulation, comfort.

Initial wise actions

- Assess severity; protect airway if large volume; CXR/CT/pathway as appropriate; review anticoagulation; urgent help if unstable.

Repair and reassessment

- Bleeding amount, oxygen, Hb, imaging, cause and follow-up.

Common student pitfalls

- Underestimating small-volume hemoptysis with malignancy or TB risk.

8. Systems of Capacity Cards

Oxygenation and Ventilation

What this system makes possible

- Lung, airway, respiratory muscles, blood oxygen carriage, and gas exchange.

How failure may appear

- Hypoxia, high work of breathing, CO2 retention, fatigue, confusion.

Student question

- Ask what blocks oxygen movement and what makes breathing effort unsustainable.

Circulation and Perfusion

What this system makes possible

- Heart, vessels, blood volume, rhythm, vascular tone, and oxygen delivery.

How failure may appear

- Shock, chest pain, syncope, edema, renal hypoperfusion, lactate context.

Student question

- Ask whether flow, pressure, rhythm, volume, or pump function is failing.

Energy Transformation

What this system makes possible

- Glucose, oxygen, mitochondria, endocrine regulation, nutrition, sleep, and inflammation.

How failure may appear

- Fatigue, weight loss, hypoglycemia, hyperglycemia, poor intake, post-infective exhaustion.

Student question

- Ask whether fuel is absent, poorly regulated, or not transformable into usable capacity.

Clearance and Transformation

What this system makes possible

- Kidneys, liver, gut, fluid/electrolyte handling, and medicine processing.

How failure may appear

- AKI, jaundice, hyperkalemia, acidosis, toxicity, encephalopathy, edema.

Student question

- Ask what the body can no longer clear or transform safely.

Defense and Tolerance

What this system makes possible

- Infection defense, immune regulation, inflammation, tissue tolerance.

How failure may appear

- Fever, sepsis, immunosuppression, autoimmune activity, allergy, chronic inflammation.

Student question

- Ask whether the patient cannot defend, is overdefending, or cannot tolerate the response.

Repair and Remodeling

What this system makes possible

- Wound healing, rehabilitation, adaptation after injury, recovery after infection or flare.

How failure may appear

- Poor healing, deconditioning, chronic pain, fibrosis, relapse, functional decline.

Student question

- Ask whether conditions for repair exist: nutrition, sleep, mobility, support, safety, time.

Regulation and Coordination

What this system makes possible

- Brain, autonomic system, endocrine system, sleep-wake cycle, attention, balance.

How failure may appear

- Delirium, dizziness, endocrine crisis, falls, dysautonomia, insomnia.

Student question

- Ask what coordination signal has failed and what destabilizes it.

Participation and Agency

What this system makes possible

- Function, understanding, decision-making, dignity, relationships, work, worship, play, and home life.

How failure may appear

- Loss of independence, unsafe discharge, demoralization, treatment burden, caregiver strain.

Student question

- Ask what the patient needs to live safely and meaningfully beyond the ward.

9. Real Patient Modifiers

Multimorbidity

- Name the active problems and how each affects the others.
- Avoid treating one disease in a way that worsens another.
- Prioritize the problem most likely to harm life-capacity now.

Polypharmacy

- Every medicine should have a current purpose, dose rationale, monitoring plan, and stop/review trigger.
- High-risk medicines require special attention: anticoagulants, insulin, opioids, sedatives, NSAIDs, diuretics, ACEi/ARBs, steroids, antibiotics.
- Discharge medicine clarity is a safety intervention.

Frailty

- Baseline matters more than age alone.
- Small insults can cause large functional or cognitive decline.
- Ask: What was the patient like two weeks or two months ago?

Falls

- Falls are syndromes, not accidents.
- Check syncope, dizziness, vision, gait, medicines, environment, cognition, footwear, alcohol, neuropathy, and bone risk.
- An anticoagulated fall is a different risk field.

Delirium

- Acute fluctuating inattention until proven otherwise.
- Look for infection, hypoxia, hypoglycemia, pain, constipation, retention, dehydration, withdrawal, sedatives, and unfamiliar environment.
- Family baseline is clinical data.

Dementia

- Do not assume new confusion is dementia.

- Capacity, communication, caregiver support, safety, and goals of care must be explicit.
- Simplify medicines and instructions.

Depression and demoralization

- Ask about mood, loss of interest, sleep, appetite, guilt, hopelessness, and suicidal intent.
- Demoralization may arise when illness destroys agency or meaning.
- Hope is not false reassurance; it is truthful accompaniment.

Chronic pain

- Pain affects sleep, mobility, mood, bowels, medicines, and participation.
- Opioids and sedatives can create harm loops.
- Measure repair in function and relief, not only pain score.

Palliative and end-of-life care

- Palliative care is not failure; it is repair oriented toward comfort, dignity, truth, and family support.
- Ask what matters most now.
- Escalation and de-escalation should both serve the patient's living good.

10. Communication, Handover, Referral, and Escalation

Communication is clinical care. It transfers meaning, risk, responsibility, and hope. Poor communication can undo good diagnosis and treatment.

Patient explanation script

- "This is what we think is happening."
- "This is what worries us."
- "This is what we are doing now."
- "This is what would make us change the plan."
- "Can you tell me in your own words what you understand?"

Handover script

- Patient and location.
- Main syndrome and working diagnosis.
- Danger or reason for concern.
- What has been done and response.
- What must be checked, when, and by whom.
- What should trigger escalation.

Referral script

- Why you are calling now.
- The focused clinical question.
- Relevant background and baseline.
- Current observations and key results.
- What you need: advice, review, transfer, procedure, follow-up.

Escalation script

- “I am concerned that this patient is deteriorating.”
- “The immediate danger is ___.”
- “The changes are ___.”
- “I have done ___.”
- “I need senior review/help with ___ now.”

11. Ward, Admission, Discharge, Follow-Up, and On-Call Checklists

Ward round

- Better, worse, unchanged, or different?
- Does the diagnosis still fit?
- What danger remains today?
- Did treatment help or harm?
- What results, medicines, function, cognition, and discharge barriers need action?
- What must be handed over?

Admission

- Immediate danger and stability.
- Presenting syndrome and dangerous alternatives.
- Baseline function and cognition.
- Medicines, allergies, high-risk drugs, and recent changes.
- Initial treatment, monitoring, escalation, and early discharge barriers.

Discharge

- Danger controlled enough for the next setting.
- Diagnosis clear enough or uncertainty explicitly safety-netted.
- Medicines reconciled, stopped medicines explained, and monitoring arranged.
- Function, cognition, pain, bowels, bladder, nutrition, and support reviewed.
- Pending results owned.
- Warning signs and follow-up understood by patient/caregiver.

Follow-up

- What was the original danger?
- What should have improved by now?
- What remains fragile?
- What medicine harm or adherence problem has appeared?
- What result, symptom, or function change should alter the plan?

On-call shift

- Immediate danger first.
- Deteriorating patients next.
- Critical results and time-critical treatments.
- High-risk medicines and unsafe transitions.

- Severe symptom burden.
- Routine tasks last.
- When overwhelmed: write the list, prioritize danger, ask for help, hand over clearly.

12. Case Presentation and Case Synthesis

A good case presentation is not a data dump. It is a guided clinical argument that explains what is happening, why it matters, what is dangerous, and what should happen next.

- Patient: age, relevant background, baseline function/cognition.
- Presenting syndrome: the pattern that brought the patient to care.
- Danger: what must not be missed or delayed.
- Key findings: focused history, examination, results, and trends.
- Capacity failure: which life-functions are impaired.
- Coupling conditions: comorbidities, medicines, frailty, support, goals.
- Working diagnosis and dangerous alternatives.
- Plan: treatment, monitoring, medicines, referrals, communication.
- Repair trajectory: what improvement should look like and what needs reassessment.

One-sentence problem representation

- "This is a [time course] [syndrome] in a [patient context] with [danger/risk], most concerning for [working diagnosis], while still needing to exclude [dangerous alternatives]."

13. Mini Cases for Practice

Case 1: Breathless and swollen

A 79-year-old woman with CKD and diabetes has worsening dyspnea, ankle edema, orthopnea, and reduced walking. Apply the loop: danger, syndrome, capacity, coupling, perturbation, repair.

Student task: write six short lines: Danger / Syndrome / Capacity Failure / Coupling Conditions / Wise Perturbation / Repair Trajectory.

Case 2: Quietly confused

An 84-year-old man is "not himself" after admission for pneumonia. He is sleepy by day and restless at night. Apply the loop and list reversible delirium drivers.

Student task: write six short lines: Danger / Syndrome / Capacity Failure / Coupling Conditions / Wise Perturbation / Repair Trajectory.

Case 3: Fatigue with dark stools

A 68-year-old man has fatigue, exertional dyspnea, pallor, aspirin use, NSAID use, and dark stools. Apply the loop and identify danger.

Student task: write six short lines: Danger / Syndrome / Capacity Failure / Coupling Conditions / Wise Perturbation / Repair Trajectory.

Case 4: AKI before discharge

A patient treated for infection has improving fever but rising creatinine, low oral intake, diuretic use, and NSAID restarted. Decide whether discharge is safe.

Student task: write six short lines: Danger / Syndrome / Capacity Failure / Coupling Conditions / Wise Perturbation / Repair Trajectory.

Case 5: Hypoglycemia at home

A patient with diabetes has recurrent morning hypoglycemia after poor appetite and CKD progression. Apply wise perturbation and repair.

Student task: write six short lines: Danger / Syndrome / Capacity Failure / Coupling Conditions / Wise Perturbation / Repair Trajectory.

Case 6: On-call deterioration

A nurse calls because a patient is more breathless, more confused, and has a rising oxygen requirement. Write your first five actions and escalation sentence.

Student task: write six short lines: Danger / Syndrome / Capacity Failure / Coupling Conditions / Wise Perturbation / Repair Trajectory.

Case 7: “Medically fit” but unsafe

An older patient is off oxygen and afebrile but cannot climb stairs, is unsure about medicines, and lives alone. Define the remaining capacity failures.

Student task: write six short lines: Danger / Syndrome / Capacity Failure / Coupling Conditions / Wise Perturbation / Repair Trajectory.

Case 8: Chronic pain and constipation

A patient on opioids has pain, poor sleep, constipation, falls, and low mood. Map treatment benefit and treatment harm.

Student task: write six short lines: Danger / Syndrome / Capacity Failure / Coupling Conditions / Wise Perturbation / Repair Trajectory.

14. Pocket Cards

The six-question bedside card

- What must not be missed?
- What pattern is present?
- What can the patient no longer sustain?
- What keeps the problem going?
- What helps most with least harm?
- How will healing be recognized?

The medicine safety card

- Why is the patient taking this medicine?
- Is it still needed now?

- Is it helping?
- Could it be causing harm?
- Does kidney/liver function, frailty, pregnancy, allergy, or interaction change safety?
- Should it start, stop, hold, reduce, restart, taper, or monitor?
- Does the patient understand it and have access to it?

The discharge safety card

- Diagnosis and uncertainty explained.
- Danger controlled enough for next setting.
- Medicines reconciled and understood.
- Function, cognition, pain, bowels, bladder, nutrition, and mobility safe or supported.
- Follow-up and pending results owned.
- Warning signs specific.
- Patient/caregiver can teach back the plan.

The uncertainty card

- State the working diagnosis.
- Name dangerous alternatives.
- Name what would change the plan.
- Arrange reassessment or follow-up.
- Give specific safety-netting.
- Do not pretend certainty when the patient is still evolving.

15. Glossary of Core Concepts

Life-coherent medicine: Clinical practice ordered toward protection, restoration, relief, support, dignity, and accompaniment of living persons.

Danger: What could seriously harm the patient if missed, delayed, undertreated, or transferred unsafely.

Syndrome: A useful clinical pattern constructed from symptoms, signs, time course, severity, risk, and context.

Capacity failure: Loss or threat to the patient's ability to sustain a life function, such as breathing, circulation, clearance, cognition, mobility, comfort, agency, or participation.

Coupling conditions: Patient, medicine, family, social, environmental, and system factors that shape deterioration or recovery.

Wise perturbation: An intervention chosen because it is indicated, proportionate, monitorable, adjustable, feasible, and likely to help more than harm.

Repair trajectory: The expected path by which the patient becomes safer, clearer, stronger, more comfortable, better supported, or more able to live.

Safety-netting: Specific communication about what to watch for, what to do, when to seek help, and who owns follow-up.

Clinical humility: The safety practice of admitting uncertainty, reassessing, listening, and asking for help before false certainty harms the patient.

Integrated judgment: The ability to hold diagnosis, physiology, function, medicines, patient values, family reality, and system constraints together in a coherent plan.

Final Student Reminder

The goal is not to memorize the handbook. The goal is to internalize a way of seeing. Every patient asks the same living question: what is threatened, what helps, what harms, what must be repaired, and who will return to check?

Return to the patient.