

# TEACH Cards

- TEACH Cards (**T**eaching **E**vidence-based medicine **A**nd **C**linical topics in the **H**ospital) is an inpatient curricular tool consisting of 50 topic-based cards designed to guide mini-teaching sessions that enhance both clinical knowledge and evidence-based medicine skills.
- TEACH Cards was developed at the University of Wisconsin-Madison Department of Family Medicine, along with contributions from Tufts University Department of Family Medicine and Saint Louis University Department of Family Medicine.
- Visit our website: [www.fammed.wisc.edu/teachcards](http://www.fammed.wisc.edu/teachcards)



# INSTRUCTIONS

- Choose a card. It should take 5-10 minutes to use. Any team member can lead the discussion.
- Discuss the background questions as a group, and look up the answers as needed.
- Find the answer to the foreground question, or have everyone write their own PICO question.
- Take 5 minutes to look up the PICO answers.
- Share the PICO answers and resources used.

## What are the two groups of questions and where can I find answers?

Background Question	Foreground Question
<p>This is a more basic question that answers who, what, where, when, why, and how.</p>	<p>This a specific clinical query: <b>PICO question.</b> <b>P</b>atient population/<b>P</b>roblem <b>I</b>ntervention/<b>E</b>xposure <b>C</b>omparison (if applicable) <b>O</b>utcome</p>
<p><b>Resources:</b> American Family Physician BMJ Clinical Evidence DynaMed Plus Essential Evidence Plus UpToDate</p>	<p><b>Resources:</b> Cochrane Database DynaMed Plus Essential Evidence Plus PubMed TRIP Database</p>

### What are some uses for the cards?

- To initiate discussion among team members
- To practice evidence-based medicine
- To guide independent study
- To create a mini presentation

*Answers are intentionally not provided.*



# CARD TOPICS

## NEUROLOGIC

Alcohol withdrawal  
Cerebral vascular  
  accident  
Delirium  
Hyperthermia  
Hypothermia  
Medication overdose  
Meningitis  
Neuroleptic malignant  
  syndrome  
Seizure  
Serotonin syndrome  
Traumatic brain injury

## CARDIOVASCULAR

Acute coronary syndrome  
Atrial fibrillation  
Bradycardia  
Congestive heart failure  
Hypertensive urgency &  
  emergency

## PULMONARY

Acute respiratory distress  
  syndrome  
Asthma exacerbation  
Community-acquired  
  pneumonia  
COPD exacerbation  
Obstructive sleep apnea  
Pulmonary embolism  
Pulmonary hypertension

# CARD TOPICS

## RENAL

Acidosis  
Acute renal failure  
Alkalosis  
Hyperkalemia  
Hypernatremia  
Hypokalemia  
Hyponatremia  
Rhabdomyolysis

## GASTROINTESTINAL

Acute abdominal pain  
Gastrointestinal bleeding  
Hepatic failure  
Pancreatitis  
Refeeding Syndrome

## INFECTIOUS DISEASE

Cellulitis  
Nosocomial infections  
Post-operative fever  
Pressure ulcers  
Sepsis

## HEMATOLOGIC

Blood product transfusion  
Heparin-induced  
thrombocytopenia  
Sickle cell anemia

## ENDOCRINE

Adrenal insufficiency  
Diabetic ketoacidosis  
Myxedema coma  
Thyroid storm

## END OF LIFE

Hospice  
Organ donation/transplant  
Pronouncement of death

# ALCOHOL WITHDRAWAL

## Background Questions:

- ✓ List the key symptoms of withdrawal and time frame in which they usually occur.
- ✓ What is CIWA, and how can it be used in management?
- ✓ Discuss the decision to manage withdrawal in the outpatient versus inpatient setting.

## Foreground Questions:

- ✓ In patients with alcohol withdrawal, are benzodiazepines more effective than non-benzodiazepines in preventing seizures?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

What city, county, or state resources are available to help prevent relapse?

# CEREBRAL VASCULAR ACCIDENT

## Background Questions:

- ✓ Discuss the use of stroke screening tools and the definition of TIA.
- ✓ List the imaging and labs used to evaluate patients with CVA and TIA.
- ✓ Discuss risk stratification criteria for evaluating TIA in the outpatient or inpatient setting.

## Foreground Questions:

- ✓ In patients who have had a stroke, do antiepileptic medications prevent seizures?
- ✓ Write your own PICO question, and try to find the answer.

### **EBM Pearl:**

Name two online resources that would assist you in finding recommendations for primary and secondary stroke prevention?

# DELIRIUM

## Background Questions:

- ✓ List common risk factors for and precipitants of delirium.
- ✓ Describe the clinical presentation of delirium and screening tools that help in diagnosis.
- ✓ Discuss the risks and benefits of pharmacologic and non-pharmacologic treatments of delirium.

## Foreground Questions:

- ✓ In elderly post-operative hospitalized patients, does haloperidol prevent the development of delirium?
- ✓ Write your own PICO question, and try to find the answer.

## EBM Pearl:

List 5 different study designs.



# HYPERTHERMIA

## Background Questions:

- ✓ Describe the difference between heat cramps, heat exhaustion, and heat stroke.
- ✓ What are the potential sequelae of extreme or prolonged hyperthermia?
- ✓ Discuss are the goals of cooling treatment in heat illness?

## Foreground Questions:

- ✓ In patients with fever, are NSAIDs more effective than acetaminophen in reducing fever?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss the inheritance and triggering agents of malignant hyperthermia.

# HYPOTHERMIA

## Background Questions:

- ✓ What are the signs and symptoms of hypothermia?
- ✓ What are the indications for therapeutic induced hypothermia?
- ✓ Discuss rewarming methods for hypothermia.
- ✓ Describe stages and treatment of frostbite.

## Foreground Questions:

- ✓ In adults following surgery, is forced air warming superior to conventional care in preventing post-op hypothermia?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

Where can uninsured homeless people receive medical care in your community?

# MEDICATION OVERDOSE

## Background Questions:

- ✓ List the symptoms of acetaminophen and two other common medication overdoses.
- ✓ Discuss the initial clinical and lab evaluation for suspected overdose.
- ✓ Explain the appropriate use of gastrointestinal decontamination.

## Foreground Questions:

- ✓ In patients with acetaminophen overdose and hepatotoxicity, does N-acetylcysteine improve mortality?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

How do you contact your local poison control, and what services do they provide?

# MENINGITIS

## Background Questions:

- ✓ Explain the history, exam, and lab findings of bacterial and aseptic meningitis.
- ✓ List the common pathogens and empiric treatment for adult patients with meningitis.
- ✓ Discuss the recommendations for immunizations and chemoprophylaxis for meningitis.

## Foreground Questions:

- ✓ In adult patients with meningitis, do steroids improve morbidity and mortality?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

How do you discuss lumbar puncture with your patient or their family members?

# NEUROLEPTIC MALIGNANT SYNDROME

## Background Questions:

- ✓ Describe the typical clinical presentation of NMS.
- ✓ Discuss the difference between NMS, serotonin syndrome, and malignant hyperthermia.
- ✓ List 5 medications that can cause NMS.
- ✓ What are the general management goals for NMS?

## Foreground Questions:

- ✓ In patients with NMS, does treatment with dantrolene or bromocriptine decrease mortality?
- ✓ Write your own PICO question, and try to find the answer.

## EBM Pearl:

How would you explain the sensitivity and specificity of a test to a patient?

# SEIZURE

## Background Questions:

- ✓ Describe the physiologic and clinical difference between generalized and focal seizures.
- ✓ How do psychogenic seizure, syncope, and seizure clinically differ?
- ✓ Discuss recommendations for imaging, lumbar puncture, and EEG after first seizure.

## Foreground Questions:

- ✓ For adult patients in status epilepticus, is lorazepam or diazepam more effective in aborting the seizure?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

How do you talk about driving to patients who have had a seizure?

# SEROTONIN SYNDROME

## Background Questions:

- ✓ Define serotonin syndrome (SS) and describe its classic features.
- ✓ Name 5 non-SSRI medications that can cause SS.
- ✓ Discuss the use of the Hunter Serotonin Toxicity Criteria for diagnosis.
- ✓ What medications can help in symptom management of serotonin syndrome?

## Foreground Questions:

- ✓ For patients with serotonin syndrome, does treatment with cyproheptadine improve symptoms?
- ✓ Write your own PICO question, and try to find the answer.

### **EBM Pearl:**

Review the Strength of Recommendation Taxonomy (SORT) for grading medical evidence.

# TRAUMATIC BRAIN INJURY

## Background Questions:

- ✓ Discuss the clinical difference between mild and moderate/severe traumatic brain injury (TBI).
- ✓ Name and discuss clinical decision tools that help determine the need for head imaging.
- ✓ Review the components of the Glasgow Coma Scale.
- ✓ Describe the services provided on inpatient rehabilitation for patients with moderate to severe TBI.

## Foreground Questions:

- ✓ In patients with TBI, does phenytoin compared to valproate decrease the incidence of seizures?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

What helmet or head safety programs are in your community?



# ACUTE CORONARY SYNDROME

## Background Questions:

- ✓ Describe anginal chest pain and non-anginal chest pain.
- ✓ List the common EKG changes for acute coronary syndrome.
- ✓ What are the initial medications used to treat acute coronary syndrome?

## Foreground Questions:

- ✓ In patients with unstable angina/NSTEMI, are invasive strategies associated with decreased mortality compared to conservative treatment?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss the different types of stress tests and the patients who are appropriate for each.

# ATRIAL FIBRILLATION

## Background Questions:

- ✓ Explain what CHA<sub>2</sub>DS<sub>2</sub>-VASc and HAS-BLED score are and how to use them.
- ✓ List secondary causes of atrial fibrillation.
- ✓ Discuss the medication options for the treatment of atrial fibrillation.
- ✓ When should patients be referred to cardiology?

## Foreground Questions:

- ✓ In patients with a fib, is catheter ablation superior to medical therapy in reducing recurrence of a fib?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss foods and beverages that can affect INR in patients taking warfarin. (Do patients need to avoid these items?)

# BRADYCARDIA

## Background Questions:

- ✓ What are the most common causes of secondary bradycardia?
- ✓ Describe the difference between 1<sup>st</sup> degree, 2<sup>nd</sup> degree type I and II, and 3<sup>rd</sup> degree heart block.
- ✓ What are the indications for pacemaker placement?
- ✓ Discuss treatment of acute symptomatic bradycardia.

## Foreground Questions:

- ✓ In patients with bradycardia, are bi-ventricular pacemakers compared to single lead pacemakers associated with greater longevity?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss the pros and cons of transcutaneous, transvenous, and implantable pacemakers.

# CONGESTIVE HEART FAILURE

## Background Questions:

- ✓ Name signs and symptoms of congestive heart failure.
- ✓ List the lab tests and imaging used to support or exclude the diagnosis of heart failure.
- ✓ When is it appropriate to repeat imaging and laboratory tests for CHF?

## Foreground Questions:

- ✓ In patients with heart failure, what is the number needed to treat for ACE inhibitors to reduce mortality?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss the evidence for cardiac resynchronization in patients with CHF.

# HYPERTENSIVE URGENCY & EMERGENCY

## Background:

- ✓ Explain the difference between hypertensive urgency and emergency.
- ✓ List the signs and symptoms of end organ damage.
- ✓ Discuss the considerations in choosing medications and follow up in treatment.

## Foreground:

- ✓ In patients with hypertensive emergency, is there an optimal rate of blood pressure reduction to decrease morbidity and mortality?
- ✓ Write your own PICO question, and try to find the answer.

## EBM Pearl:

Explain the difference between relative and absolute risk reduction.

# ACUTE RESPIRATORY DISTRESS SYNDROME

## Background Questions:

- ✓ What is the Berlin Definition for diagnosing ARDS?
- ✓ Discuss common causes of indirect lung injury that lead to ARDS.
- ✓ Describe the work-up for suspected ARDS.
- ✓ What are the main treatment components for ARDS?

## Foreground Questions:

- ✓ In adults with ARDS, does the use of surfactant improve survival?
- ✓ Write your own PICO question, and try to find the answer.

**EBM Pearl:**  
Define validity.  
What determines the validity of a study?

# ASTHMA EXACERBATION

## Background Questions:

- ✓ Discuss classification of asthma control and severity, and discuss risk factors for an asthma exacerbation.
- ✓ What is the differential diagnosis and diagnostic work-up of someone presenting with respiratory distress.
- ✓ When is inpatient admission warranted for asthma?
- ✓ Discuss inpatient management of asthma exacerbation.

## Foreground Questions:

- ✓ In patients with persistent symptomatic asthma, does long term treatment with azithromycin vs placebo reduce frequency of hospitalizations?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

What is an asthma action plan, and what are its components?

# COMMUNITY-ACQUIRED PNEUMONIA

## Background Questions:

- ✓ List the organisms that commonly cause community acquired pneumonia (CAP) in adults.
- ✓ When is it appropriate to obtain lab studies, and what labs would you order?
- ✓ Discuss differences in management of CAP in outpatient, inpatient, and ICU settings.

## Foreground Questions:

- ✓ In patients with CAP, is procalcitonin useful for determining the need for antibiotics?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss the use of the Pneumonia Severity Index (PSI) and CURB-65.



# COPD EXACERBATION

## **Background Questions:**

- ✓ Define COPD exacerbation.
- ✓ List the key medications for the treatment of mild, moderate, and severe exacerbation.
- ✓ When does a patient need to be admitted to the hospital for treatment of COPD exacerbation?

## **Foreground Questions:**

- ✓ In hospitalized patients with a COPD exacerbation, do IV or oral corticosteroids lead to decreased mortality?
- ✓ Write your own PICO question, and try to find the answer.

## **Community Health Pearl:**

What are the smoking cessation programs and resources in your community?

# OBSTRUCTIVE SLEEP APNEA

## Background Questions:

- ✓ What are the signs and symptoms of OSA?
- ✓ Describe the physiologic sequelae of OSA.
- ✓ Discuss the Epworth Sleepiness Scale.
- ✓ What are the differences between an attended sleep lab study versus a home sleep study?
- ✓ Describe how CPAP works.

## Foreground Questions:

- ✓ For patients who are intolerant to CPAP, is surgery or oral appliance more effective at reducing OSA severity at 12 months?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss techniques to use when talking to patients about behavior change.

# PULMONARY EMBOLISM

## Background Questions:

- ✓ List the common risk factors for PE.
- ✓ What role do the D-dimer lab and imaging play in diagnosis of PE?
- ✓ Describe the acute and chronic treatment of PE.
- ✓ When is it appropriate to evaluate for thrombophilia, and what tests are included in the evaluation?

## Foreground Questions:

- ✓ In patients with PE, is anticoagulation with rivaroxaban as effective as warfarin in preventing recurrent PE?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

What criteria determines the duration of anti-coagulation therapy?

# PULMONARY HYPERTENSION

## Background Questions:

- ✓ List the common causes of secondary pulmonary hypertension (PH).
- ✓ Discuss the indications for and initial tests used to evaluate pulmonary hypertension.
- ✓ What are the common medications used in primary pulmonary hypertension?

## Foreground Questions:

- ✓ In patients with pulmonary hypertension, does exercise improve endurance?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

Are there local pulmonary rehabilitation programs, and how are they structured?

# ACIDOSIS

## Background Questions:

- ✓ What are the common causes of anion gap and non-anion gap metabolic acidosis?
- ✓ What is the work-up for renal tubular acidosis?
- ✓ Discuss how to determine the primary etiology of an acid-base disorder based on ABG and how to calculate expected compensation?

## Foreground Questions:

- ✓ For inpatients with mild-moderate acidosis (pH 7.1-7.35), does IV sodium bicarbonate lead to decreased mortality?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

What is the delta delta ratio (delta gap)?

# ACUTE RENAL FAILURE

## Background Questions:

- ✓ What are common causes of acute pre-renal, intra-renal, and post renal failure?
- ✓ How do you determine the etiology of acute renal failure?
- ✓ When is it appropriate to obtain imaging studies, and what studies would you order?

## Foreground Questions:

- ✓ For adults taking metformin, do NSAIDs increase the likelihood of lactic acidosis?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

What should you document for a patient with acute renal failure who has underlying chronic kidney disease?

# ALKALOSIS

## Background Questions:

- ✓ What are the common causes of metabolic and respiratory alkalosis?
- ✓ Discuss the pathophysiology and treatment of chloride-responsive (contraction) metabolic alkalosis.
- ✓ How would you adjust mechanical ventilation settings to correct respiratory alkalosis?

## Foreground Questions:

- ✓ For ICU patients with metabolic alkalosis, is a single dose of acetazolamide as effective as multiple doses for treatment of metabolic alkalosis?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

What are the differences between arterial and venous blood gas analysis?

# HYPERKALEMIA

## Background Questions

- ✓ What are the complications of hyperkalemia?
- ✓ Describe the EKG changes in hyperkalemia.
- ✓ How should medications for hyperkalemia be given, and when should labs be checked?

## Foreground Questions:

- ✓ In patients taking both ACE inhibitors and ARBs, what is the relative risk of hyperkalemia?
- ✓ Write your own PICO question, and try to find the answer.

**EBM Pearl:**  
Define relative  
risk.



# HYPERNATREMIA

## Background Questions:

- ✓ Describe the classification of hypernatremia based on volume status.
- ✓ What is the work-up for hypernatremia?
- ✓ Discuss methods and potential complications of hypernatremia correction.
- ✓ What medications can treat diabetes insipidus?

## Foreground Questions:

- ✓ In patients on lithium who develop diabetes insipidus and hypernatremia, does stopping lithium correct hypernatremia?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

How do you calculate free water deficit?

# HYPOKALEMIA

## Background Questions:

- ✓ What are the common causes of hypokalemia?
- ✓ Describe the clinical manifestations of hypokalemia.
- ✓ What are the potential complications of hypokalemia?
- ✓ Discuss principles of potassium replacement.

## Foreground Questions:

- ✓ In patients taking potassium-wasting diuretics, is a potassium rich diet as effective as a potassium supplement in maintaining a normal potassium level?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss ways to minimize discomfort with IV potassium replacement.

# HYPONATREMIA

## Background Questions:

- ✓ Describe how hyponatremia is classified.
- ✓ Name lab tests to help determine the cause of hyponatremia.
- ✓ What are the different methods of treating hyponatremia?

## Foreground Questions:

- ✓ In elderly patients, is chlorthalidone or HCTZ associated with a higher mortality rate?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss how to determine when hyponatremia requires immediate treatment.

# RHABDOMYOLYSIS

## Background Questions:

- ✓ Discuss the pathophysiology and diagnosis of rhabdomyolysis.
- ✓ Explain how IV fluids are used in treatment.
- ✓ Discuss the common complications of rhabdomyolysis.
- ✓ When should hemodialysis, sodium bicarbonate, and/or mannitol be used in treatment?

## Foreground Questions:

- ✓ When rhabdomyolysis is due to statin use, which other lipid medications reduce cardiovascular mortality?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss the medications and toxins that increase the risk of rhabdomyolysis.

# ACUTE ABDOMINAL PAIN

## Background Questions:

- ✓ List history and exam findings that differentiate obstruction and peritonitis from other abdominal pain.
- ✓ Discuss considerations for appropriate imaging for abdominal pain evaluation.
- ✓ Discuss indications for immediate surgical consultation.

## Foreground Questions:

- ✓ In patients with acute abdominal pain, is the Alvarado score or Appendicitis Inflammatory Response (AIR) score more sensitive for predicting appendicitis?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss how your evaluation changes in women of child-bearing age.

# GASTROINTESTINAL BLEEDING

## Background Questions:

- ✓ Explain the expected symptoms and causes of upper and lower GI bleeding.
- ✓ Discuss indications for inpatient evaluation and management of GI bleeding.
- ✓ Discuss medications to initiate or discontinue during upper and lower GI bleeding.

## Foreground Questions:

- ✓ In patients with upper GI bleed, does treatment with IV PPI vs no PPI decrease the risk of rebleeding?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss the indications and logistics of blood transfusions during a GI bleed.

# HEPATIC FAILURE

## Background Questions:

- ✓ List common risk factors for development of cirrhosis.
- ✓ Describe the common physical exam findings in patients with cirrhosis.
- ✓ Discuss labs and images used to diagnose cirrhosis.
- ✓ Explain the indications for medicinal and surgical treatment of ascites and cirrhosis.

## Foreground Questions:

- ✓ In cirrhotic patients with ascites, is spironolactone or furosemide more effective at treating ascites?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

Where is the nearest liver transplant center, and what is the average waiting time?

# PANCREATITIS

## Background Questions:

- ✓ Discuss the risk factors for acute pancreatitis.
- ✓ List the components and use of at least one acute pancreatitis scoring system.
- ✓ Explain the indications for ERCP.

## Foreground Questions:

- ✓ In patients with severe acute pancreatitis, is enteral feeding associated with increased mortality compared to parenteral feeding?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

What is the evidence for using antibiotics in acute pancreatitis?



# REFEEDING SYNDROME

## Background Questions:

- ✓ Describe 3 risk factors for refeeding syndrome.
- ✓ Which nutritional deficiency is most profound in refeeding syndrome?
- ✓ Describe 3 dangerous clinical complications of refeeding syndrome.
- ✓ How can you prevent refeeding syndrome in patients?

## Foreground Questions:

- ✓ For patients with anorexia nervosa, does family therapy compared to individual therapy reduce relapse rates?
- ✓ Write your own PICO question, and try to find the answer.

## EBM Pearl:

Try to find a critical appraisal worksheet for a randomized control trial.

# CELLULITIS

## Background Questions:

- ✓ What is the difference between cellulitis and erysipelas?
- ✓ Which populations are at higher risk for community-acquired MRSA?
- ✓ What are signs and symptoms that should increase your suspicion for necrotizing fasciitis?
- ✓ What oral and IV antibiotics are used to treat cellulitis?

## Foreground Questions:

- ✓ For adults in the ICU, does decolonization prevent MRSA infections?
- ✓ Write your own PICO question, and try to find the answer.

### EBM Pearl:

Define confidence interval and odds ratio.

# NOSOCOMIAL INFECTIONS

## Background Questions:

- ✓ What is the difference between hospital acquired pneumonia (HAP) and healthcare associated pneumonia (HCAP)?
- ✓ What empiric antibiotic regimen would you initiate for suspected HCAP?
- ✓ List risk factors for Clostridium difficile infection.
- ✓ Discuss five interventions that decrease the incidence of nosocomial infections.

## Foreground Questions:

- ✓ For adults requiring antibiotics, do probiotics decrease the likelihood of acquiring C. difficile-associated diarrhea?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

Review your state level healthcare-associated infections progress report on [www.cdc.gov](http://www.cdc.gov). Where can you find your own hospital data?

# POST-OPERATIVE FEVER

## Background Questions:

- ✓ What are the 5 “W’s” for causes of post-op fever?
- ✓ Discuss differential diagnosis based on the timing of the fever.
- ✓ What are the most likely pathogens causing surgical site infections?
- ✓ Discuss the work-up and treatment of post-op fever.

## Foreground Questions:

- ✓ In post-operative patients does the use of incentive spirometry compared to observation reduce the risk of pneumonia?
- ✓ Write your own PICO question, and try to find the answer.

### **EBM Pearl:**

How does pretest probability affect the predictive value of a test?

# PRESSURE ULCERS

## Background Questions:

- ✓ What are the stages of a pressure ulcer?
- ✓ Discuss risk factors for developing a pressure ulcer.
- ✓ Review 3 types of wound dressings including an advantage and disadvantage of each.
- ✓ What is the imaging method of choice to evaluate for osteomyelitis?

## Foreground Questions:

- ✓ For elderly patients does vitamin C prevent pressure ulcers?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

Review [healthypeople.gov](https://www.healthypeople.gov) to find national benchmarks for different diseases. e.g. Find national goals for pressure ulcer-related hospitalization.

# SEPSIS

## Background Questions:

- ✓ Define SIRS, sepsis, severe sepsis, and septic shock.
- ✓ Explain the initial evaluation of sepsis.
- ✓ Discuss the management of blood pressure in patients with sepsis.
- ✓ Discuss the choice and management of antibiotics in patients with sepsis.

## Foreground Questions:

- ✓ In patients with sepsis does early enteral feeding compared to fasting improve survival?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Discuss IV access options, and explain how to obtain IV access in patients with sepsis.

# BLOOD PRODUCT TRANSFUSION

## Background Questions:

- ✓ Discuss indications and contraindications for transfusion of PRBCs, platelets, and FFP.
- ✓ When should irradiated blood products be used?
- ✓ Discuss management of mild to severe transfusion reactions.
- ✓ Discuss how to correct elevated INR.

## Foreground Questions:

- ✓ In patients undergoing blood transfusion, do prophylactic loop diuretics decrease transfusion-related morbidity?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

What is the difference between type & screen and type & cross match?

# HEPARIN-INDUCED THROMBOCYTOPENIA

## Background Questions:

- ✓ What are the two types of HIT?
- ✓ When does HIT typically present?
- ✓ For whom should you consider obtaining HIT antibody testing? When is testing not helpful?

## Foreground Questions:

- ✓ For adults requiring heparin, is low molecular weight heparin compared to unfractionated heparin less likely to cause HIT?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Review the 4T's Score and how you would use it.



# SICKLE CELL ANEMIA

## Background Questions:

- ✓ Discuss diagnostic criteria for acute chest syndrome?
- ✓ Discuss pain management for someone experiencing a sickle cell vaso-occlusive crisis requiring hospitalization.
- ✓ What are the indications for a blood transfusion in a patient with a sickle cell vaso-occlusive crisis?
- ✓ What immunizations should sickle cell patients receive?

## Foreground Questions:

- ✓ For adults hospitalized with a painful sickle cell crisis, does incentive spirometry reduce the risk of acute chest syndrome?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Read “Voices of Adults Living with Sickle Cell Disease Pain”

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3804106>

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# ADRENAL INSUFFICIENCY

## Background Questions:

- ✓ What are the main causes of primary, secondary, and critical illness-related adrenal insufficiency?
- ✓ Discuss how the ACTH stimulation test is performed and how to interpret the results.
- ✓ What imaging test is indicated if secondary adrenal insufficiency is suspected?
- ✓ Describe the treatment of acute adrenal insufficiency.

## Foreground Questions:

- ✓ In women with primary adrenal insufficiency, does DHEA improve symptoms and quality of life?
- ✓ Write your own PICO question, and try to find the answer.

## EBM Pearl:

What is the difference between incidence and prevalence?

# DIABETIC KETOACIDOSIS

## Background Questions:

- ✓ Describe the pathophysiology of DKA.
- ✓ What are the laboratory and physiologic differences between DKA and hyperosmolar hyperglycemic state?
- ✓ Discuss treatment of DKA. What is an indication for delaying insulin therapy?
- ✓ What are the early signs of cerebral edema, and how can it be prevented?

## Foreground Questions:

- ✓ In patients with DKA is subcutaneous insulin as effective as IV insulin drip in treating DKA?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

What is the difference between osmolality and osmolarity?

# MYXEDEMA COMA

## Background Questions:

- ✓ Discuss the definitions of and distinctions between hypothyroidism, myxedema, and myxedema coma.
- ✓ What medications can cause hypothyroidism?
- ✓ Discuss principles of treatment for myxedema coma.
- ✓ What is the prognosis for patients with myxedema coma?

## Foreground Questions:

- ✓ In patients with subclinical hypothyroidism, does levothyroxine treatment result in decreased cardiovascular morbidity?
- ✓ Write your own PICO question, and try to find the answer.

## Teaching Pearl:

Read about the history of iodized salt in the US. Which populations are still at risk for iodine deficiency?

# THYROID STORM

## Background Questions:

- ✓ Discuss the definitions of and distinctions between hyperthyroidism, thyrotoxicosis, and thyroid storm.
- ✓ What are common triggers of thyroid storm?
- ✓ What laboratory findings are common in thyrotoxicosis?
- ✓ Discuss principles of treatment for thyroid storm?

## Foreground Questions:

- ✓ In pregnant patients with hyperthyroidism, is treatment with methimazole or propylthiouricil safer in the first trimester?
- ✓ Write your own PICO question, and try to find the answer.

### **EBM Pearl:**

Discuss limitations of EBM in clinical decision making.

# HOSPICE CARE

## **Background Questions:**

- ✓ List services that hospice provides.
- ✓ Discuss patient qualifications for admission to hospice.
- ✓ When and how do you present hospice to your patients?

## **Foreground Questions:**

- ✓ In cancer patients is oxycodone superior to morphine in alleviating pain?
- ✓ Write your own PICO question, and try to find the answer.

**Community Health Pearl:**  
What county or state resources are available for your patients requiring end of life care?

# ORGAN DONATION/TRANSPLANT

## Background Questions:

- ✓ Describe the necessary consent for organ donation.
- ✓ What are exclusion criteria to receive an organ transplant?
- ✓ Discuss the time frame for organ procurement.
- ✓ Discuss health considerations for transplant recipients on immunosuppressive medications.

## Foreground Questions:

- ✓ In a country/population, do presumed consent laws increase the rate of organ donation?
- ✓ Write your own PICO question, and try to find the answer.

**Community Health Pearl:**  
How do organ donation policies in the US differ from other countries?

# PRONOUNCEMENT OF DEATH

## Background Questions:

- ✓ List the key information to know prior to death pronouncement.
- ✓ Identify the important information for documentation.
- ✓ What decisions need to be made if the death is unexpected?

## Foreground Questions:

- ✓ For family members of patients requiring CPR, does observing CPR or not observing CPR increase the likelihood of PTSD?
- ✓ Write your own PICO question, and try to find the answer.

## Community Health Pearl:

What is the age-adjusted death rate due to cancer for African Americans in your county?