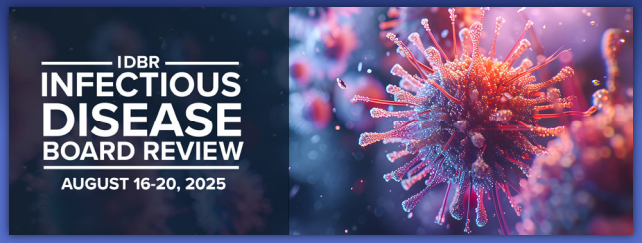

Board Review: Day 3

Moderator: Paul Auwaerter, MD

Faculty: Drs. Aronoff, Bell, Bennett, Dorman, Ghanem, and Klompas

8/5/2025

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BOARD REVIEW DAY 3

#31 A 42-year-old man from Northern California presents to the clinic with intermittent daily fever spikes as high as 104ºF, headache, and myalgias that lasted for about three days.

He felt well, but the following week he experienced these symptoms again, prompting him to see medical care.

He had been hiking in the forested mountains in the Sierra Nevadas and stayed in a restive cabin for several nights, two weeks before the onset of symptoms.

He reports some mosquito bites but no tick bites. However, he wondered about flea or chigger bites around his ankles where he noted some blood upon wakening one morning after sleeping in a bed in the cabin.

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BOARD REVIEW DAY 3

#31 On exam, he had a temperature of 103ºF and associated rigor. His exam revealed no findings, such as a heart murmur, joint swelling or rash. However, laboratory findings revealed mild thrombocytopenia and elevated liver enzymes.

Which diagnostic approach would most likely confirm the pathogen causing his illness?

A. Acute and convalescent serology for *Babesia microti*

B. IgM and IgG for *Rickettsia rickettsii*

C. PCR for *Ehrlichia chaffeensis*

D. Wright-stained blood smear

E. Serology for *Borrelia burgdorferi*

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BOARD REVIEW DAY 3

#32 A 50-year-old man presents with a 3-month history of epigastric pain, bloating, and nausea.

He reports worsening symptoms after meals but denies weight loss or gastrointestinal bleeding.

He has no history of NSAID or aspirin use.

A urea breath test is positive for *Helicobacter pylori* infection.

The patient has never been treated for H. pylori, and antibiotic susceptibility testing is not available.

Which of the following is the most appropriate first-line treatment?

A. Clarithromycin plus metronidazole

B. Levofloxacin plus metronidazole triple therapy

C. Bismuth subsalicylate, tetracycline and metronidazole

D. Amoxicillin and tetracycline

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BR3 Board Review - Day 3

Moderator - Paul Auwaerter, MD

BOARD REVIEW DAY 3

#33 You are called to the PACU to see a 29-year-old man with a fever of 40°C who is 4 hours post-operative from an arthroscopic repair for a rotator cuff injury.

He is a healthy male with no underlying disease and was injured playing soccer.

The patient is somnolent, flushed, diaphoretic, and rigid.

His blood pressure was elevated from 150/80 to 180/100 twenty minutes ago. Now the BP is 110/60.

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BOARD REVIEW DAY 3

#33 He is given one ampule of Narcan (naloxone) but does not respond.

Which of the following treatments would you suggest?

A. IVIG
B. High-dose corticosteroids
C. Dantrolene
D. Subcutaneous or IV epinephrine
E. High-dose ceftriaxone

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BOARD REVIEW DAY 3

#34 A 34-year-old man is admitted with 3 weeks of intermittent fevers, productive cough, and a 15lb weight loss.

He was born in Guatemala but has been living in the US for the past 12 years.

He is married and has two kids, ages 6 and 8. All family members are healthy.

Workup is significant for fever (temp 38.2 C), mild tachypnea (respiratory rate 24 breaths per minute), mild hypoxemia (oxygen saturation 93% on ambient air), and cavitary lesion in the right upper lobe.

HIV test is negative.

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BOARD REVIEW DAY 3

#34 Sputum gram stain and culture are unrevealing.

Sputum AFB smear is negative but tuberculosis nucleic acid amplification on the sputum is positive.

He's started on empiric treatment with isoniazid, rifampin, pyrazinamide, and ethambutol.

When can this patient be discharged home?

A. Immediately
B. As soon as sputum cultures confirm drug susceptible tuberculosis
C. After symptom improvement and a minimum of one week of active treatment
D. After a minimum of two weeks of active treatment

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BOARD REVIEW DAY 3

#35 A 32-year-old cis-gender woman is diagnosed with *M genitalium* cervicitis following a work-up for persistent cervicitis.

She presents for treatment with her male partner. The partner is asymptomatic. She is instructed to take doxycycline for one week, followed by moxifloxacin for one week.

What is the most appropriate next step when managing the partner?

A. No treatment
B. Treat with one week of doxycycline followed by 4 days of azithromycin
C. Treat with the same regimen as his partner
D. Perform a nucleic acid amplification test for *M genitalium* from a urine specimen
E. Perform a culture test for M genitalium from a urethral specimen

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BOARD REVIEW DAY 3

#36 A 24-year-old woman presents to the emergency department with two days of high fever, profound fatigue, and cough.

She was previously healthy and has lived in the US all of her life in an isolated religious community which did not immunize its children or adults.

Review of systems is notable for conjunctivitis and nasal congestion but no shortness of breath, abdominal pain, diarrhea, or rash.

She returned one week ago from a trip to Bosnia and Herzegovina with a church group.

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BOARD REVIEW DAY 3

#36 While abroad she did volunteer work in a school, went hiking in the mountains, stayed on a farm, helped to milk cows, and drank unpasteurized milk.

On exam she looks unwell, temperature is 103 degrees Fahrenheit, heart rate is 110 beats per minute, blood pressure is 100/70mm Hg, respiratory rate is 24 breaths per minute, oxygen saturation is 94% on ambient air.

Exam is notable for conjunctival infection but is otherwise normal. She has no rash.

Chest x-ray is normal. Nasopharyngeal swab is negative for influenza, RSV, and SARS-CoV-2 by PCR.

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BOARD REVIEW DAY 3

#36 What precautions if any will you implement for this patient in the Emergency Department or in the hospital if she were to be admitted?

A. Airborne
B. Droplet
C. Contact
D. Contact + Droplet
E. Contact + Airborne

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BR3 Board Review - Day 3

Moderator - Paul Auwaerter, MD

BOARD REVIEW DAY 3

#37 A 52-year-old household domestic worked in rural West Virginia presented with increasing malaise and fatigue, a 20-pound weight loss and a chronic labial ulcer.

Physical examination was otherwise normal.

The ulcer appeared a few weeks earlier, was only painful (stinging sensation) when urinating and not associated with regional adenopathy. She was not sexually active.

The biopsy of the ulcer showed yeast forms consistent with Histoplasma.

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BOARD REVIEW DAY 3

#37 A urine antigen test was positive for histoplasmosis. She was started on itraconazole 200 mg twice daily.

In the absence of health insurance, other tests were confined to routine blood work, which found a WBC 4,300 with a normal differential, hemoglobin of 10 gm%, normal serum creatinine and normal electrolytes except for an elevated potassium of 6.0 meq/l.

Over the next month, her labial ulcer healed, her WBC rose to 5,400 and hemoglobin to 12 gm%. Blood chemistries were unchanged. Easy fatigability continued, she did not gain weight and was unable to return to work.

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BOARD REVIEW DAY 3

#37 Which of the following would be the most useful next step in her workup?

A. 24-hour urine aldosterone

B. 8 am plasma cortisol

C. Trough itraconazole level

D. Plasma free T4

E. Stool occult blood

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BOARD REVIEW DAY 3

#38 Which of the following statements regarding serological testing for Lyme disease (*Borrelia* burgdorferi) is correct?

A. FDA-approved modified two-tier testing (MTTT, two EIA tests) offers better sensitivity if performed in the setting of erythema migrans than standard two-tier testing (STTT, one EIA followed by an immunoblot)

B. PCR offers the best sensitivity compared to the CSF index (antibody-testing) for diagnosing neuroborreliosis

C. For clinicians awaiting test results, STTT typically yields positive test results faster than MTTT

D. Serologic cross-reactivity can yield false positive results when diagnosing Lyme disease in the setting of a co-infection with *Babesia microti*

E. Using MTTT or STTT can determine if a lesion that resembles erythema migrans is Southern Tick-Associated infection (STARI)

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BOARD REVIEW DAY 3

#39 A 45-year-old male is diagnosed with *Helicobacter pylori* infection by endoscopy and antral gastric biopsy performed for weight loss and abdominal pain. There is a family history of gastric cancer. He is treated for 14 days with bismuth subsalicylate, metronidazole, a proton pump inhibitor, and tetracycline.

What would be best option to evaluate this patient regarding *Helicobacter* infection/disease after completing antibiotic therapy?

A. No further testing is necessary for one year
B. Perform the stool *Helicobacter pylori* antigen test 8 weeks after treatment
C. Perform the urea breath test 3 weeks after treatment
D. Repeat endoscopy, biopsy and rapid urease test (RUT) 6 weeks after treatment

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BOARD REVIEW DAY 3

#40 A 78-year-old woman is admitted to hospital with 2 months of progressive weakness, fatigue, shortness of breath, and 10 lb weight loss.

She has a history of non-Hodgkins lymphoma that was treated 20 years ago with radiation and chemotherapy.

Workup is notable for bilateral, patchy, upper lobe predominant infiltrates on chest CT.

Bronchoscopy gram stain and culture are unrevealing but AFB smear is positive and a tuberculosis nucleic acid amplification test is positive.

She's placed on Airborne precautions, moved to an Airborne Infection Isolation Room (AIIR), and started on standard 4-drug anti-tuberculous therapy.

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BOARD REVIEW DAY 3

#40 She has multiple complications unrelated to her tuberculosis and thus must stay on the rehabilitation service.

The team calls and asks when can she come off airborne precautions?

A. Immediately –she does not need isolation in the hospital
B. As soon as her symptoms are clearly improving
C. After a minimum of two weeks of active therapy
D. After at least three consecutive AFB smears collected ≥ 8 hours apart are negative
E. After a minimum 2 weeks active therapy, symptom improvement, and 3 negative sputum AFB smears

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BOARD REVIEW DAY 3

#41 A healthy 32-year-old man is admitted to the hospital following a motor vehicle accident.

Incidentally, he is noted to have multiple painful genital lesions and is diagnosed with Mpox.

Many of his lesions have a scab.

He is placed in a private room with standard Mpox precautions (contact, droplet, and airborne in this case).

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BOARD REVIEW DAY 3

#41 From the infection control standpoint, which of the following statements best describes the optimal time to discontinue isolation?

A. He is currently no longer infectious and does not need isolation
B. When all lesions have a scab
C. When all scabs have fallen off
D. When all scabs have fallen off and re-epithelialization has occurred
E. He will remain infectious and require isolation for at least 12 weeks after onset of clinical manifestations of infection

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BOARD REVIEW DAY 3

#42 The surgical intensive care unit and the associated stepdown floor in which you work is struggling with an ongoing cluster of *Candida auris* infections.

Seven cases have been identified thus far.

The infection control team cohorts all the *Candida auris* patients into one section of the ICU, places known carriers on Contact Precautions, institutes weekly screening of all uninfected ICU and stepdown patients in order to detect and isolate newly colonized patients early, and institutes daily chlorhexidine baths for all patents.

Hand hygiene is closely monitored and encouraged.

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BOARD REVIEW DAY 3

#42 Each patient bay is equipped with a dedicated stethoscope, blood pressure cuff, pulse oximeter, EKG leads, and glucometer.

The only equipment taken from patient to patient are axillary temperature probes that are fastidiously cleaned between each patient. Despite these measures additional cases are detected.

What are the best next steps to abort the cluster?

A. Cleaning each room twice daily with a quaternary ammonium compound
B. Administering prophylactic fluconazole to all patients
C. Switching to disposable temperature probes
D. Changing the curtains between patients' beds daily
E. Flushing all sink drains in patient rooms with bleach foam twice a week

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BOARD REVIEW DAY 3

#43 A 64-year-old woman presented in the emergency room with fever, nausea, sore throat, muscle pain, headache and several loose stools over the past 24 hours.

She had been in good health and was recovering well after functional endoscopic nasal surgery done 9 days ago for chronic sinusitis.

She lived in downtown Chicago with her husband, a dog, a kitten and her 5-year-old granddaughter, who had been ill with a cough and low-grade fever.

The patient had no recent travel and was taking no medications. .

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BOARD REVIEW DAY 3

#43 On examination she had a temperature of 38.9C, pulse 109 and BP 86/45.

She had a diffuse erythematous rash, particularly notable on her palms.

Routine labs were notable for a creatinine of 3.1 mg/dl, WBC 14,900 and platelets of 112,000.

She was given three liters of saline with little improvement in her blood pressure, admitted to intensive care and began requiring oxygen support.

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BOARD REVIEW DAY 3

#43 What was the most likely pathogen?

A. Streptococcus pyogenes
B. Staphylococcus aureus
C. Capnocytophaga canimorsus
D. Bartonella henselae
E. COVID-19

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BOARD REVIEW DAY 3

#44 A patient with HIV initiated bictegravir/tenofovir alafenamide/emtricitabine (BIC/TAF/FTC) once daily. The patient's HIV viral load has declined from 1.3 million c/mL at ART initiation to 1000 c/mL after 6 months on antiretroviral therapy. The patient is also on rifampin and isoniazid plus pyridoxine for treatment of pulmonary tuberculosis.

What is the most likely cause for this patient's incomplete virologic response?

A. The patient had a high baseline HIV-1 RNA level and may require more time to achieve viral suppression
B. Drug-drug interaction between rifampin and tenofovir alafenamide
C. Drug-drug interaction between rifampin and bictegravir
D. High pill burden contributing to non-adherence

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BOARD REVIEW DAY 3

#45 You are asked to investigate a cluster of hospital-onset carbapenem-resistant Enterobacterales (CRE) bloodstream infections. There have been 4 cases thus far, all with *Klebsiella pneumoniae*. Whole genome sequencing suggests the isolates are all closely related. You review the patients' histories:

- 37-year-old woman admitted with gallstone pancreatitis
- 62-year-old man admitted with hematemesis due to a duodenal ulcer and *H. pylori*
- 42-year-old woman admitted for endoscopic gastric bypass revision
- 17-year-old woman admitted with diarrhea, weight loss, and anemia.

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#45 **What steps will you take next to identify the potential source of this cluster?**

A. Identify any hospital staff that cared for all 4 patients; if so, work with occupational health to get these employees cultured (nails, axillae, groin, rectal swabs)

B. Review whether there was a common hospital food served to all 4 patients, if so, work with the hospital kitchen to requisition any remaining ingredients and culture

C. Check to see if all 4 patients were admitted to the same room or same unit: if so, culture the environment (bed rails, door handles, computer keyboards, etc.)

D. Establish whether all 4 patients were prescribed a common intravenous medication; if so, requisition the remaining lot from pharmacy and send for culture

E. Look whether all 4 patients had common procedures; if so, culture any devices used in all 4 procedures and review the hospital's disinfection process for these devices

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