**Top 12 ID Consult Questions**

**HIV Exposed Neonates (i.e. infants born to an HIV+ mother)**
- **Most likely consulting service:**
  - NICU or Nursery at BWH, BIDMC, or an outside hospital
- **What they want to know:**
  - What tests to send and how to treat the baby
- **Key points:**
  - Guidelines are available (see below) and usually provide needed information
  - For women on stable ARV therapy and with very low viral loads, the infant generally receives 6 weeks of zidovudine; for women at higher risk (e.g. poorly controlled HIV), nevirapine is usually added to zidovudine.
- **Initial questions to ask:**
  - What antiretroviral therapy is Mom on, and when did she start it?
  - What is Mom’s most recent viral load?
- **Resources:**
  - Management of infants of HIV-positive mothers (can be found on Chasing Microbes → Practice Guidelines)

**Neonatal CMV infection** (i.e. neonate with a positive CMV culture, or whose mother had acute CMV during pregnancy)
- **Most likely consulting service:**
  - BWH or BIDMC NICU
- **What they want to know:**
  - What additional testing should be sent on the baby?
  - Should ganciclovir/valganciclovir be started? Should CMV Ig be used?
  - How long should ganciclovir/valganciclovir be continued?
  - Was the infection acquired prenatally or by consumption of breast milk?
  - Should breastmilk be frozen before feeding to reduce ongoing exposure?
- **Key points:**
  - A shell vial culture from urine or saliva establishes CMV infection in the neonate, but does not provide information about the extent of organ involvement
  - In very preterm neonates, postnatal acquisition through breastmilk may be difficult to distinguish from prenatal acquisition and may have a similar course.
  - The workup for a baby with congenital CMV generally includes CBC (for thrombocytopenia), LFTs, hearing test, ophthalmology exam, neuroimaging, and serum CMV DNA PCR. An LP for CMV PCR may also be done.
  - Deciding whether to treat, for how long, and whether IV (ganciclovir) or oral (valganciclovir) can be complex, and there is no simple algorithm. In general, treatment is indicated when there are end-organ effects, especially in preterm infants.
- **Initial questions to ask:**
  - What testing and workup has been done so far?
  - What is the baby’s gestational age?
  - How is the baby doing clinically?
Is the baby receiving any breastmilk?
What is Mom’s CMV antibody status now and earlier in pregnancy (if known)?

**Resources:**
- Review article from 2013 (Swanson – PMID 23481104)
- Red Book antiviral dosing guide

**Zoster exposure in neonates and immunocompromised patients**

**Most likely consulting service:**
- Outside calls from pediatricians (neonates); onc/transplant/BMT (ICH patients)

**What they want to know:**
- Should the patient receive VariZIG?

**Key points:**
- The RedBook has fairly clear recommendations for these questions
- The need for post-exposure prophylaxis depends on two factors: the nature of the exposure and the patient’s risk
- For babies exposed to a person with a covered rash (most common outside call), post-exposure prophylaxis is generally not needed

**Initial questions to ask:**
- When was the exposure?
- What was the nature of the exposure (e.g. direct contact vs held by a caregiver with covered lesions on the back)?
- Has the patient (if >1 year) been immunized?

**Resources:**
- The Red Book

**Neonates born to mothers with a history of syphilis or positive RPR**

**Most likely consulting service:**
- NICU or Nursery at BWH, BIDMC, or an outside hospital

**What they want to know:**
- Does the baby need a full evaluation for congenital syphilis?
- Does the baby need treatment?

**Key points:**
- The Red Book has a useful algorithm (also available on UpToDate) for determining whether a neonate needs a full workup for syphilis (which includes, in addition to a physical exam, a CBC and LP for CSF studies including VDRL).
- RPRs from the Brigham are sent out and results take several days to come back, so sometimes consults relate to the question of whether the baby should be empirically treated while awaiting this result or followed up in primary care clinic

**Initial questions to ask:**
- What is the mother’s most recent RPR and prior RPRs?
- When was the mother treated, and what was her treatment regimen?
- Also make sure to ask about Mom’s HIV status

**Resources:**
- Algorithm 1 (taken from the Red Book) and Table 1 in the UpToDate article “Congenital syphilis: Evaluation, management, and prevention”
- The Red Book
- The state Department of Public Health keeps track of syphilis treatment and can be helpful if
Mom’s records are not fully available or the history is unclear.

Possible rabies exposure:

- **Most likely consulting service:**
  - Community pediatrician or outside hospital ED
- **What they want to know:**
  - Does the patient need post-exposure rabies prophylaxis?
- **Key points:**
  - The Epidemiology division at the State Lab is very experienced in handling questions about post-exposure prophylaxis for rabies – you can suggest the consulting provider contact them if the Red Book guidance leaves you uncertain.
- **Initial questions to ask:**
  - When was the patient bitten/scratched, and by what kind of animal?
  - Is the animal available for testing?
  - If a pet dog, was the dog vaccinated and if not is it available for quarantine?
- **Resources:**
  - The Red Book
  - Massachusetts DPH Division of Epidemiology: (617) 983-6800 (available 24/7) – you can call them, and so can PCPs and other providers, and even patients.

Infected neurosurgical hardware (e.g. VP shunt, spinal rods, vagal nerve stimulator)

- **Most likely consulting service:**
  - Neurosurgery
- **What they want to know:**
  - What empiric antibiotics should be used?
  - Does hardware need to be removed (or externalized in the case of a VP shunt)?
  - When can hardware be replaced (if it has already been removed)?
- **Key points:**
  - **VP shunt infection**: Generally treated by externalization of the shunt and a period of antibiotic therapy followed by re-internalization of the shunt.
  - **Spinal hardware infection**: Hardware removal is the most effective component of therapy but is not always feasible. Hardware cannot be removed for months after surgery, so early-onset infections must be treated with it in place.
- **Initial questions to ask:**
  - When was the hardware originally placed?
  - Have there been recent revisions or replacements?
  - Has the patient ever had an infection of the hardware before?
  - If hardware has already been removed, was everything removed or are there components still in place?
- **Resources:**
  - **VP shunt infections:**
    - [IDSA Bacterial Meningitis guidelines](https://www.idr.org/files/2016.05.19_BacterialMeningitis_2016_update.pdf) (pp. 1280-1281)
    - [IDSA Healthcare-Associated Ventriculitis/Meningitis](https://www.idr.org/files/2016.05.19_BacterialMeningitis_2016_update.pdf)
    - UpToDate (“Infections of central nervous system shunts and other devices”)
  - **Spinal hardware infections:**
- **IDSA Prosthetic Joint Infection guideline** – *not* a guideline for management of spinal hardware infections, but the antibiotic regimens may provide a helpful starting point
- **IDEA** on duration of therapy for late-onset spinal hardware infections

### Osteomyelitis

- **Most likely consulting service:**
  - Orthopedic surgery if surgical intervention planned
  - General Pediatrics/Short Stay if no intervention planned (uncomplicated cases typically managed by General Pediatrics without ID involvement)
- **What they want to know:**
  - What empiric antibiotics should be used?
  - How long to treat IV?
- **Key points:**
  - If hemodynamically stable, will be admitted off antibiotics if orthopedics plans to take to OR
  - Team should get at least a blood culture and MRSA nasal & pharyngeal swab before antibiotics (MRSA swab most likely to be forgotten)
  - Most likely organism is *Staph aureus*
  - Will start cefazolin per EBG (plus vancomycin if patient is sick)
  - Can switch to PO antibiotics when afebrile, decreasing inflammatory markers, and clinically improving
- **Initial questions to ask:**
  - Any trauma to that might cause strange organisms (water, animal bites, etc)?
  - MRSA history in patient or family?
- **Resources:**
  - Osteomyelitis EBG (simple acute & complex acute) - available on chasing microbes -> practice guidelines
  - **IDSA Guidelines Vertebral Osteomyelitis**
  - **IDEA on timing of switch to oral antibiotics**

### Septic Arthritis

- **Most likely consulting service:**
  - Orthopedic surgery if surgical intervention planned
  - General Pediatrics/Short Stay if no intervention planned
- **What they want to know:**
  - What empiric antibiotics should be used?
  - How long to treat IV?
- **Key points:**
  - This is a Lyme endemic area so empiric therapy is ceftriaxone (75 mg/kg daily) & vancomycin
  - Team should get at least a blood culture, synovial fluid culture, and MRSA nasal & pharyngeal swab before antibiotics (MRSA swab most likely to be forgotten)
  - If no organisms on gram stain, ask them to place an Add on Micro Test for Lyme PCR on synovial fluid. Team will usually have already sent Lyme Ab on serum.
  - Most likely non-Lyme organism is *Staph aureus*, which can be treated with 21 days of oral therapy once afebrile, decreasing inflammatory markers, and clinically improving
  - Lyme arthritis is treated with 28 days of doxycycline (2 mg/kg/dose BID, max dose 100 mg) or amoxicillin (17 mg/kg TID, max dose 500 mg, if < 8 yo)

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• **Initial questions to ask:**
  - Any trauma that might cause strange organisms (water, animal bites, etc)?
  - Known tick bites or outdoor exposure? Febrile illness during summer, erythema migrans rash, or facial palsy?
  - MRSA history in patient or family?

• **Resources:**
  - Septic Arthritis CPG (Practice Guidelines)
  - IDSA Guideline Lyme, Anaplasmosis, and Babesiosis
  - RedBook Lyme Disease

**Lyme Meningitis**

• **Most likely consulting service:**
  - General Pediatrics/Short Stay or ER

• **What they want to know:**
  - What empiric antibiotics should be used?
  - How long to treat IV?

• **Key points:**
  - Diagnosis based on CSF pleocytosis (can be low ~10) and positive Lyme antibody in serum, multiple erythema migrans rash (pathognomonic), positive Lyme antibody in CSF, or rarely positive CSF Lyme PCR.
  - If high clinical suspicion but enterovirus PCR is negative and serum Lyme Ab equivocal, can consider placing an Add on Micro Test for Lyme Ab on CSF. Lyme PCR has poor sensitivity in CSF (~25%), so we do not tend to recommend, but if primary team has sent and it is positive, this is helpful.
  - LP not needed for isolated facial nerve palsy if no symptoms of meningitis.
  - Lyme meningitis is treated with IV ceftriaxone 75-100 mg/kg daily (max dose 2 g) for 14-28 days (depending on attending)
  - Alternative (somewhat more controversial) regimen is doxycycline 2 mg/kg/dose BID (max dose 100 mg)
  - Jarisch-Herxheimer reaction can occur with worsening symptoms and fever for the first 24 hours after starting therapy

• **Initial questions to ask:**
  - Known tick bites, erythema migrans rash, or outdoor exposure?
  - Prior history of Lyme disease? When, symptoms, how was it treated? Prior Lyme disease makes Lyme antibody harder to interpret.
  - Sick contacts with GI illness (for enterovirus exposure)?

• **Resources:**
  - IDSA Guideline Lyme, Anaplasmosis, and Babesiosis
  - RedBook Lyme Disease

**Diagnostic Tests for Procedure in 2 Hours**

• **Most likely consulting service:**
  - Oncology, Surgery, General Pediatrics, ICU, Transplant

• **What they want to know:**
  - What tests should be sent?
• Should antibiotics be broadened after the procedure?

  **Key points:**
  - When you have less information to go on, order more tests than if you had time to do a full H&P before the procedure
  - Try to give the team (or the micro lab) an order of priority in case there is limited tissue
  - **Remind them to send tissue to PATHOLOGY too!**
    - To save tissue, you can ask the micro lab not to do AFB stain, KOH stain, and Gram stain. The AFB and fungal stains often are better on histology.
  - Refer to the Auto-Text in PowerChart (e.g. .idTestBiopsy). Basic tests are:
    - Aerobic Culture and Gram Stain
    - Fungus Culture (KOH stain needs to be ordered separately if you want it)
    - AFB Culture and Stain (Stain performed at state lab unless ordered STAT)
    - Anaerobic Culture (Priority of this varies based on source)
    - Misc. Lab Test to freeze remaining tissue unground at -80 for further testing.
  - For BAL Testing, look at the Auto-Text in PowerChart (.idTestBAL). This list doesn't include Histo/Blasto/Cocci Ag testing on BAL (which is better than serum or urine) – so consider based on patient’s risk.

  **Initial questions to ask:**
  - How long has the condition been going on for?
  - What does the team think is going on, and why are they calling now?
  - How much tissue are they likely to obtain (aspirate vs. core vs. excisional biopsy)?
  - Any unusual exposures? (Born abroad, international travel, animals, trauma, surgery, etc.)

**Resources:**
- Microbiology Specimen Collection Guideline
- Anaerobic Specimen Collection Guide
- Pathogens to Notify the Micro Lab When There is Clinical Suspicion

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**Bacteremia/Fungemia/Endocarditis**

  **Most likely consulting service:**
  - Oncology, ICU, Cardiology, General Surgery (Short Gut & Transplant)

  **What they want to know:**
  - What empiric antibiotics should be used?
  - Should we pull the line?

  **Key points:**
  - Ask for repeat large volume aerobic and anaerobic blood cultures (before broadening antibiotics), particularly in ICU patients because it can take time to get them. Then call them back with antibiotic recommendations.
  - Often we try to salvage lines for short gut or end-stage renal disease b/c they have limited access locations. Patients should be hemodynamically stable, and we recommend antibiotic lock therapy for this.
  - Almost always recommend line removal for Candida, Staph aureus, and Pseudomonas b/c of biofilm formation and high mortality of these infections.
  - For possible subacute bacterial endocarditis, try to get 3 large volume aerobic and anaerobic blood culture sets before starting antibiotic therapy. Space them out over time as much as possible, but we never tell the team they cannot start antibiotics.
  - Endocarditis typically occurs in patients with congenital heart disease or children with a new
murmur.
  o Echocardiogram reasonable if persistent bacteremia for 48-72 hrs with Staph aureus or other bacteria that commonly causes endocarditis.

• **Initial questions to ask:**
  o When was the line placed and what type?
  o Where are the positive cultures from (one vs. both lumens vs. peripheral)?
  o Is there erythema or drainage from the line insertion site? (If so, ask for a culture and line removal if possible)
  o Have they had prior line infections with this line?
  o Can the line be removed? What other access does the patient have?
  o What resistant organisms has the patient had in the past?

• **Resources:**
  o IDSA Guideline Intravascular Catheter Associated Infection
  o AHA Endocarditis Guidelines
  o IDEA Antibiotic Locks for Gram Negative CRBI
  o IDEA Antifungal Lock Therapy
  o IDEA TTE vs. TEE Negative Predicative Value for Endocarditis
  o Heart Rhythm Society Consensus Statement on CIED (pages e519-527)

**Sexual Assault:**

• **Most likely consulting service:**
  o BCH ED or outside ED

• **What they want to know:**
  o Does the patient need post-exposure prophylaxis for HIV?
  o ID Follow up for children < 12

• **Key points:**
  o At BCH, we cover the pre-pubertal children and adolescent covers the post-pubertal.
  o There are useful Emergency Medicine EBGs to read and follow

• **Initial questions to ask:**
  o When did the assault occur (<72 hrs ago)?
  o What was the nature of the assault (location, trauma vs. consensual, condoms vs. semen exposure, number of perpetrators, etc.)?
  o Is the perpetrator known to be HIV-infected or high-risk for HIV (IVDU, MSM, etc)?

• **Resources:**
  o Sexual Assault, PrePubertal (<12yrs)
  o Sexual Assault, Pubertal (≥12yrs)
  o ADDENDUM TO EBG