

# **PEDIATRIC INFECTIOUS DISEASE**

**Royal College Prep**

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## A FEW WORDS OF WISDOM

- Remember this is a topic you enjoy (in theory)
- Enjoy time with people you like
- Don't let the Royal College ruin your friendships
- Next year is way way better. And worth it.
- NACI Guidelines > CPS > Red Book



# CONTENT

- 1. Congenital Infections : CHEAP TORCHESZ
- 2. Pediatric TB
- 3. HIV in newborns and children
- 4. CPS Statements :
  - Hepatitis B Virus
  - Lyme Disease
  - Rotavirus vaccine
  - AOM kids <6mo
- 5. Exposures and prophylaxis
  - VZV
  - Rabies
  - Bites



## WHAT I WILL NOT GO OVER

- All the Infectious Disease CPS Statements
- Vaccinations
- Approach to pneumonia, AOM....



# CONGENITAL INFECTIONS....

□ TORCH.....Z?



# CONGENITAL INFECTIONS : CHEAP

## TORCHES-Z

- C – Chicken pox
- H – Hepatitis B, C, E
- E - Enterovirus
- A - AIDS
- P – Parvovirus B19
- T - Toxoplasmosis
- O – Other (TB, WNV)
- R - Rubella
- C - CMV
- H - HSV
- E – EVERY STD
- S - Syphilis
- Z - Zika



# WHEN TO SUSPECT TORCH

- A question on the Royal College
- IUGR, prematurity
- Intracranial calcifications
- Rash – blueberry, on palms and soles
- Hear or visions AbN
- Thrombocytopenia
- HSM
  
- Most Common?

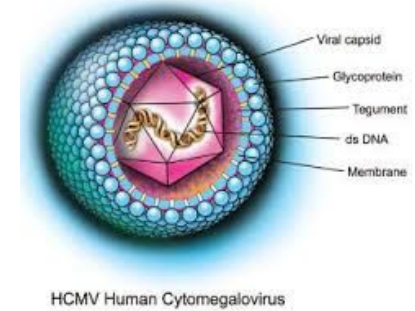


# CMV CONGENITAL INFECTIONS

## □ Clinical Features :

- General – **IUGR**, prematurity
- Skin – petechiae, purpura, echymoses, jaundice
- Heme – **thrombocytopenia**, splenomegaly
- Hepatobiliary – **hepatomegaly**, hyperbilirubinemia,
- CNS – **microcephaly**, seizures, **periventricular calcifications**
- Eye - Chorioretinitis, strabismus, optic atrophy, microphthalmia
- Ear – **SNHL**
  
- **ASYMPTOMATIC (85-90%)**

## □ MOST COMMON CAUSE OF HEARING LOSS



anemia

elevated ALT





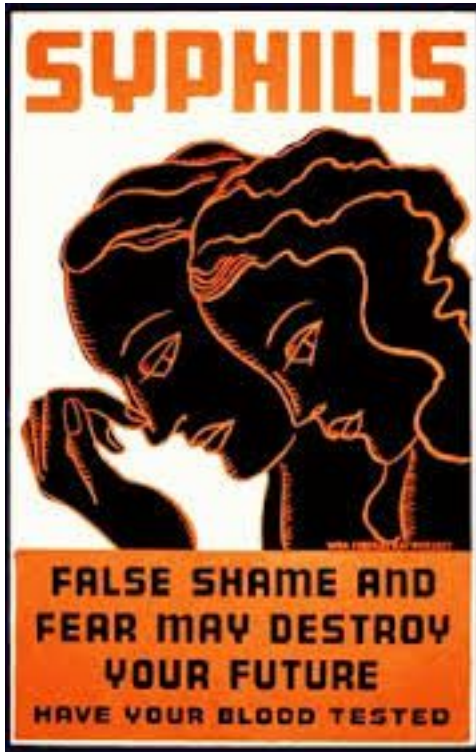
# CMV CONGENITAL INFECTIONS

## □ Treatment :

- Valganciclovir for **symptomatic** congenital CMV
  - RCT 6 wks vs 6 months oral valganciclovir
  - Improved hearing & neurocognitive measures at 12&24 months when treated with **6 months**
  - Who to treat ?
    - **ALL SYMPTOMATIC** neonates
      - CNS involvement, SNHL, chorioretinitis
    - Case by case for mild symptomatic neonates
  - Monitor :
    - CBC, Cr
    - hearing and neurocognitive development



# SYPHILIS



# SYPHILIS

## □ Clinical Symptoms :

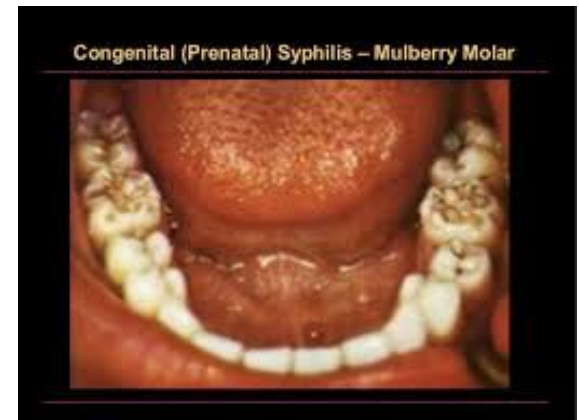
- General : **Prematurity, IUGR**
- Mucocutaneous : **Snuffles**, maculopapular rash followed by desquamation
- Reticuloendothelial: lymphadenopathy  
**Hepatosplenomegaly**
- Hematologic : thrombocytopenia
- **Skeletal** : Pseudoparalysis, osteochondritis, diaphyseal periostitis, demineralization/ destruction of proximal tibia metaphysis, osteitis
- Neurologic : **Aseptic meningitis**, hydrocephalus, cranial nerve palsies
- Ophthalmologic : Salt and pepper chorioretinitis, glaucoma, uveitis



# LATE\_ONSET\_MANIFESTATIONS

## □ Clinical Symptoms :

- CNS : **Global developmental delay**
- Eye : Interstitial keratitis
- Ears : **SNHL**
- Face : Saddle nose, frontal bossing, high arch palate
- Teeth : **Hutchinson's teeth, mulberry molars**
- Skin : Ragades (linear scars), gummas
- MSK : Saber shins, clutton joints, Higoumenakis' sign



# SYPHILIS

## ▣ RPR :

- NON-treponemal testing
- Demonstrates active inflammation

## ▣ Treponemal Specific testing :

- These are antibody based
  - ▣ non specific (other treponemal bacteria are positive)
  - ▣ Positive for life (usually)
- Ie. EIA, INNOLIA, VDRL (CSF only)



# SYPHILIS

Treponemal	RPR	Interpretation
+	+	Syphilis Treated Syphilis Cross reactivity
+	-	Late latent syphilis Treated syphilis Early primary syphilis Cross reactivity
-	+	False positive RPR

- When in doubt – check mom, and babe
- If concerned → will need wu



# EVALUATION OF CHILDREN WITH SUSPECTED SYPHILIS

- Physical exam
- BW : CBC, LFT
- Serial syphilis serology – 0, 3, 6, 12, 18 months
  - Watch for RPR to fall
- LP : syphilis test VDRL
- Skeletal survey – long bone GR
  
- Treatment :
  - Proven disease, high risk : IV Pen G 10-14 days
  - Asymptomatic, mom treated : close fu



# RUBELLA

- R - retinopathy
- U – U can't hear!
- B – bones – radiolucent, muffin
- E – eyes – cataracts and glaucor
- L – little head
- L – little plt
- A - PDA

blueberry

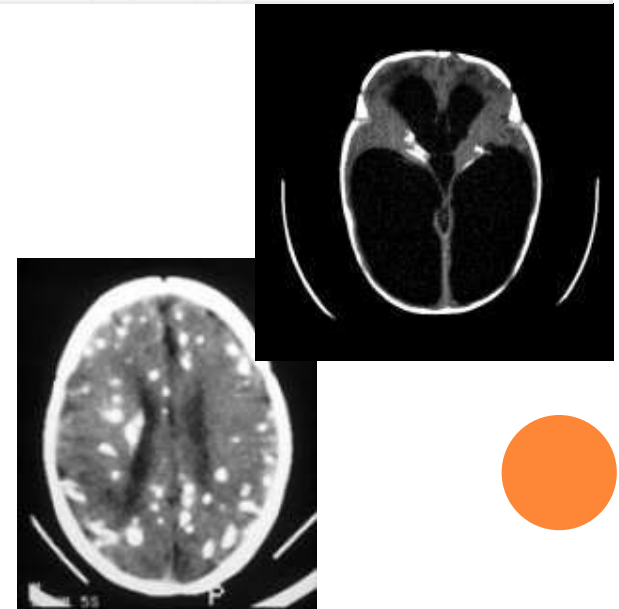
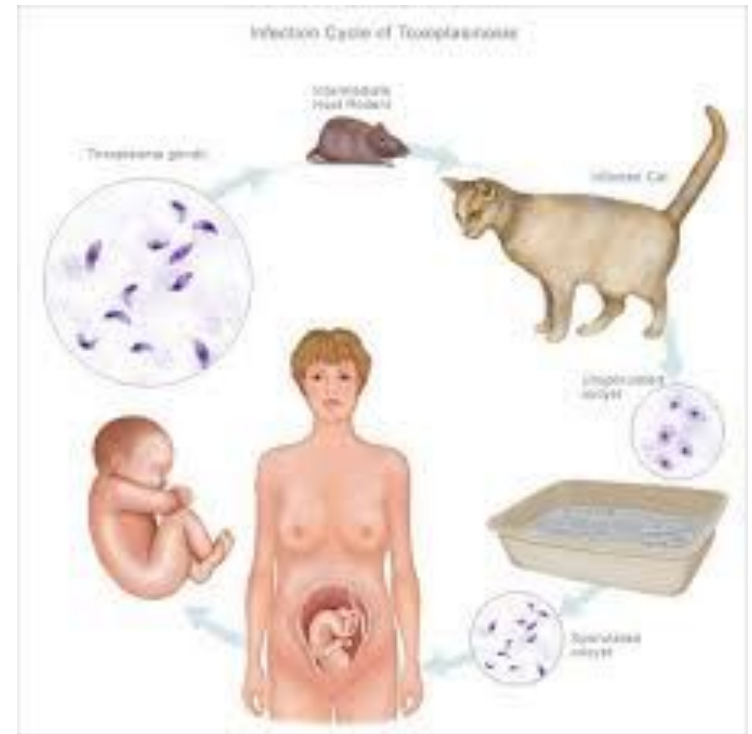
glaucor





# TOXOPLASMOSIS

- Toxoplasmosis is a parasite
- Found in cat urine
- Triad :
  - Hydrocephalus (TOXO)
  - Cerebral calcifications
  - Chorioretinitis
- Most asymptomatic (85%)



# TOXOPLASMOSIS :

## □ **Diagnosis :**

- CSF – elevated lymphocytes
- PCR on CSF, blood, urine, tissue
- Serology can be falsy negative

## □ **Treatment :**

- Pyrimethamine & sulfadiazine & leucovorin x 12months
- VP shunt
- +/- steroids



## SUMMARY :

### □ **CMV**

- IUGR, HSM, thrombocytopenia, microcephaly, periventricular calcifications, hearing loss, chorioretinitis

### □ **Syphilis**

- IUGR, snuffles, rashes (palms and soles), eyes, aseptic meningitis

### □ **Rubella**

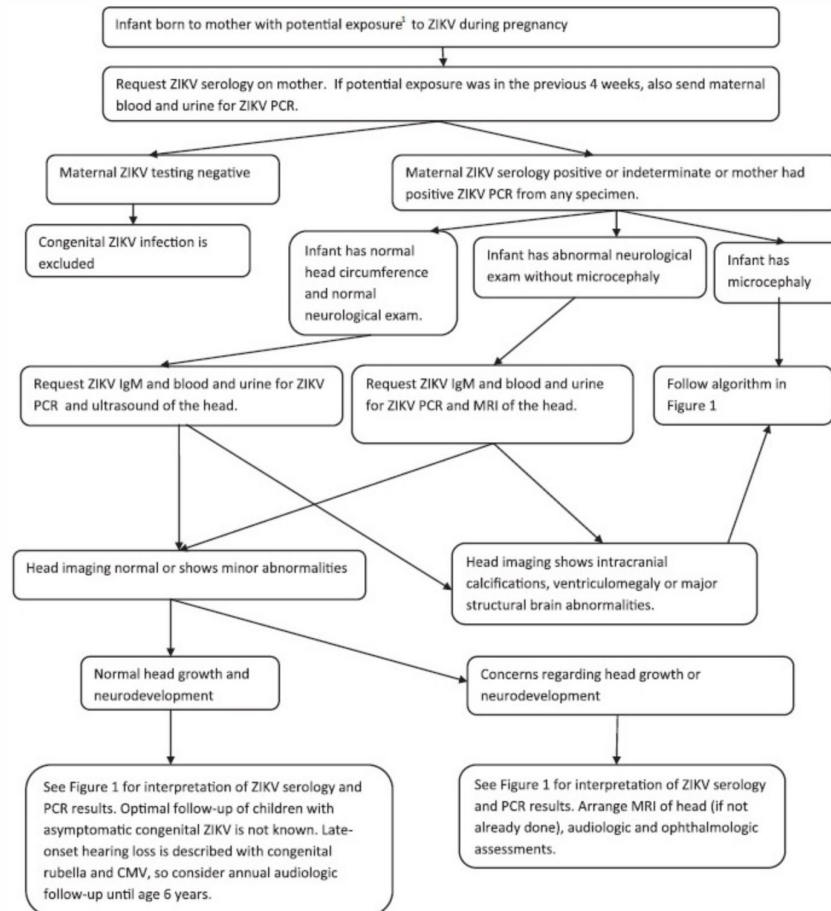
- IUGR, blueberry muffin rash, HSM, cataracts, skeletal abN

### □ **Toxoplasmosis**

- macrocephaly, hydrocephalus, parenchymal calcifications, chorioretinitis



**Figure 2. Management of infants born to women with potential exposure to ZIKV during pregnancy.**



<sup>1</sup>Travel to a ZIKV-endemic country during pregnancy or sexual contact during pregnancy with a male who travelled to a ZIKV-endemic country in the preceding 6 months.





<b>Congenital Infections</b>	Syphilis	Toxo	Rubella	CMV	Herpes
Prematurity	X	X		X	X
IUGR			X	X	
Developmental Anomalies			X	X	
Persistent PN infections	X	X	X	X	X
Hepatosplenomegaly	X	X	X	X	X
Jaundice	X	X	X	X	X
Microcephaly				XX	
Petechiae/Purpura	X	X	X	X	X
Intracranial Calcification		*X		*X	
Hydrocephalus		XX	X		
CHD			XX		
Hearing Deficit	X		X	X	X
Bone Lesions	XX	X	X		
Eye Lesions	XX	XX	XX	X	X

# TUBERCULOSIS

- 1. TB exposure – significant contact
- 2. TB infection – asymptomatic, no active disease (latent)
- 3. TB disease – active disease

## TUBERCULOSIS



YOUR KISS OF  
AFFECTION  
THE GERM OF  
INFECTION

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AND GENERAL AND PROJECT, HEALTH



# CLINICAL PRESENTATION OF TB

- ❑ **Children are at increased risk of TB disease**
- ❑ **Young children :**
  - Non-specific!!!
  - Fever without a source, HSM, respiratory distress, lymphadenopathy, abdominal distention, irritability
  - Unusual to have classic pulmonary TB
- ❑ **Older Children :**
  - Fever, night sweats, weight loss
  - Pulmonary lesion





# DIAGNOSIS

## □ **Active TB :**

- Gastric aspirates (infants) – low yield <50-75%
- AFB & mycobacterial culture in sputum, aspirate, BAL
- CXR

## □ **Latent TB :**

- Mantoux (TST)
- Interferon gamma release assay (IGRA)
  - Quantiferon gold

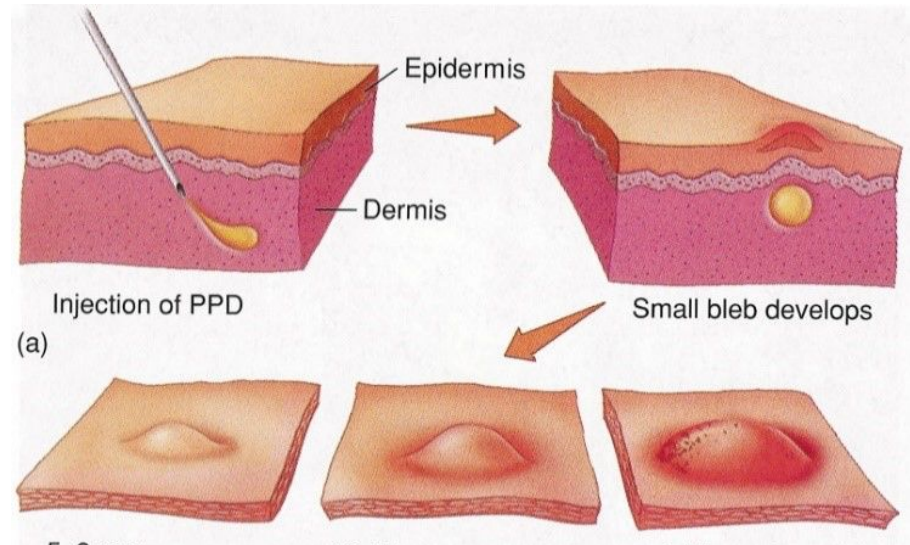
## □ **Molecular testing :**

- PCR on bone biopsy, pleural fluid, joint fluid, CSF
- Gene expert



# MANTOUX

- Injection of tuberculin protein SC
- Positive TST can be latent, active TB, BCG
- False Negative – LOTS
  - poor technique
  - other infection
  - medications, vaccines, disease,
  - <6mo
- Good to use with health care staff where you will follow over time



0-4mm : <5yo AND high risk of TB

>5mm : HIV, close contact TB, AbN  
CXR, immunosuppressive meds, ESRD

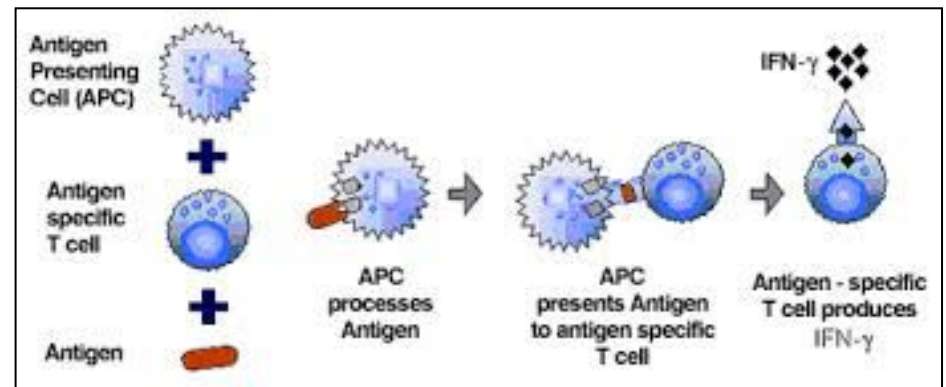
>10mm : Everyone else

# IGRA (QUANTIFERON GOLD)

- Patients T cells (blood) are mixed with TB specific proteins and you measure the interferon gamma response (via ELISA)

- When to use :

- Pt with BCG
- Pt who will not return appointment



- High risk patient where TST may be false neg

- Combination IGRA & TST

- Children with suspected TB disease



# TB MEDICATIONS

## □ R : Rifampin :

- Orange discoloration of secretions, **hepatitis**, interacts with LOTS of medications

## □ I : Isoniazide :

- Liver transaminases elevation, **hepatitis**, peripheral neuropathy

## □ P : Pyrazinamide :

- **Hepatitis**, arthralgia

## □ E : Ethambutol :

- Optic neuritis, gastro disturbances



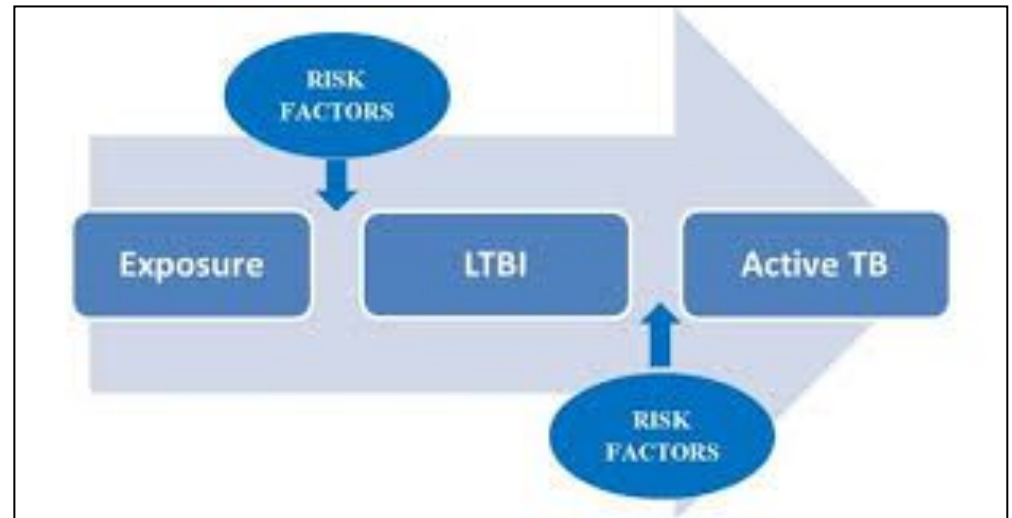
# TB TREATMENT

- 4 for 2 months :
  - RIPE
- 2 for 4 months
  - RI
- Minimum treatment **6 months**
  - 9 months if cavities on CXR, or + sputum @ 2 months
  - 9-12 months if CNS TB, disseminated/miliary TB, bone & joint TB
- Steroids recommended in :
  - CNS TB
  - Pericardial TB – STEROIDS NO LONGER SUGGESTED



# LATENT TB

- Children with LTB :
  - No symptoms, no CXR findings
- Diagnosis :
  - TST or IGRA +
- Treatment :
  - 9 months isoniazide
  - Other tx strategies



# MULTIDRUG RESISTANT TB

- MDR – multidrug resistant TB
- XDR – extensive drug resistant TB

- Pt at risk of MDR TB :

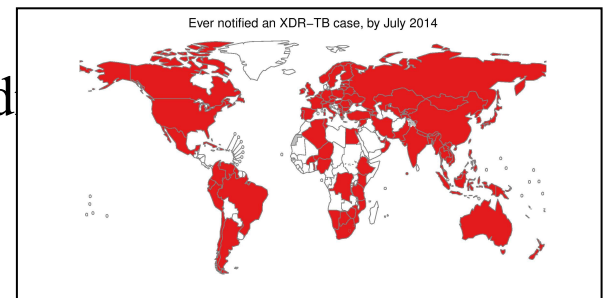
- History of TB treatment
- Contact with pt with MDR
- Born in country endemic TB
- TB patient with smear + AFB 2 months after appropriate treatment

- Treatment :

- much much longer with many



many d



## PEDIATRIC CONTACTS AND TB :

- Children <5 with negative TST and no evidence of active TB treat
  - TREAT with INH WINDOW of preventative therapy to prevent the development of TB x 8 weeks
  - TST may take up to 8 weeks to convert to positive
- INH may be discontinued
  - Rpt TST neg
  - Asymptomatic
  - Immunocompetent
  - Pt > 6 months

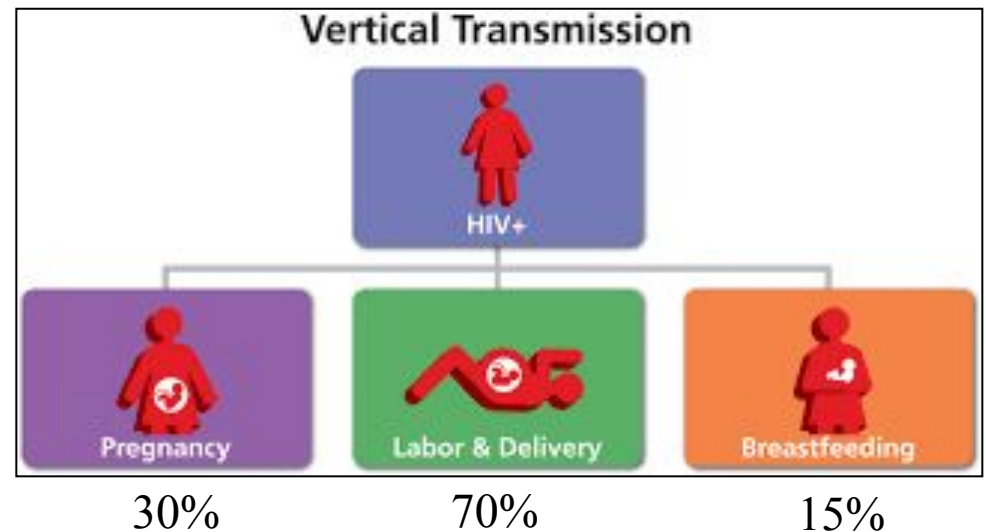




# HIV IN NEWBORNS

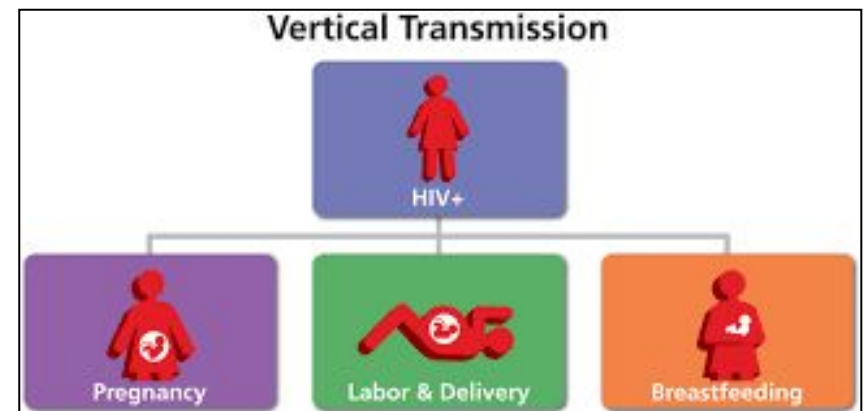
- Prevention of Mother to Child Transmission (MTCT)
- HIV + Mom            25% perinatal transmission
- ↓
- HIV + Mom + AZT            8% perinatal transmission
- ↓
- HIV + Mom ART + AZT            <1% perinatal transmission

- Vertical Transmission  
HIV :



# MEDICAL INTERVENTIONS

- 1. ALL MOMS on triple therapy for life
  - 2. Maternal AZT during delivery
  - 3. Babe gets AZT for 6 weeks
  - 4. NVP (babe x 3, mom x 1) (or triple therapy) if high risk (no previous treatment, high VL)
  - 5. Elective C/S if VL>1000
  - 6. Avoid breast feeding (in Canada)
  - 7. Septra until neg PCR
- 
- AZT = zidovudine
  - NVP = niviripine



# A NOTE ABOUT BREAST FEEDING

□ Contraindications :



# A NOTE ABOUT BREAST FEEDING

## ❑ **Contraindications :**

- HIV
- HTLV-1, 2
- Brucella

## ❑ **NOT contraindicated :**

- HCV
- HBV
- CMV
  
- HSV – just cover your face
- TB – delay BF for first 2 weeks of treatment
- Mastitis – as long as no pus



## FOLLOW UP

- PCR – birth, 2wks, 4 wks, 4 months
  
- HIV positive : 2 separate HIV PCR tests
  
- HIV Negative :
  - 2 neg PCR @ >1m & >2m
  - Serology neg @ 18months



# PRESENTATIONS OF HIV IN CHILDHOOD

- Failure to Thrive (FTT)
- CNS :
  - small head
  - developmental delay
  - developmental regression
- Recurrent infections :
  - thrush
  - URTI
  - diarrhea
- Unusual infections : PJP, TB

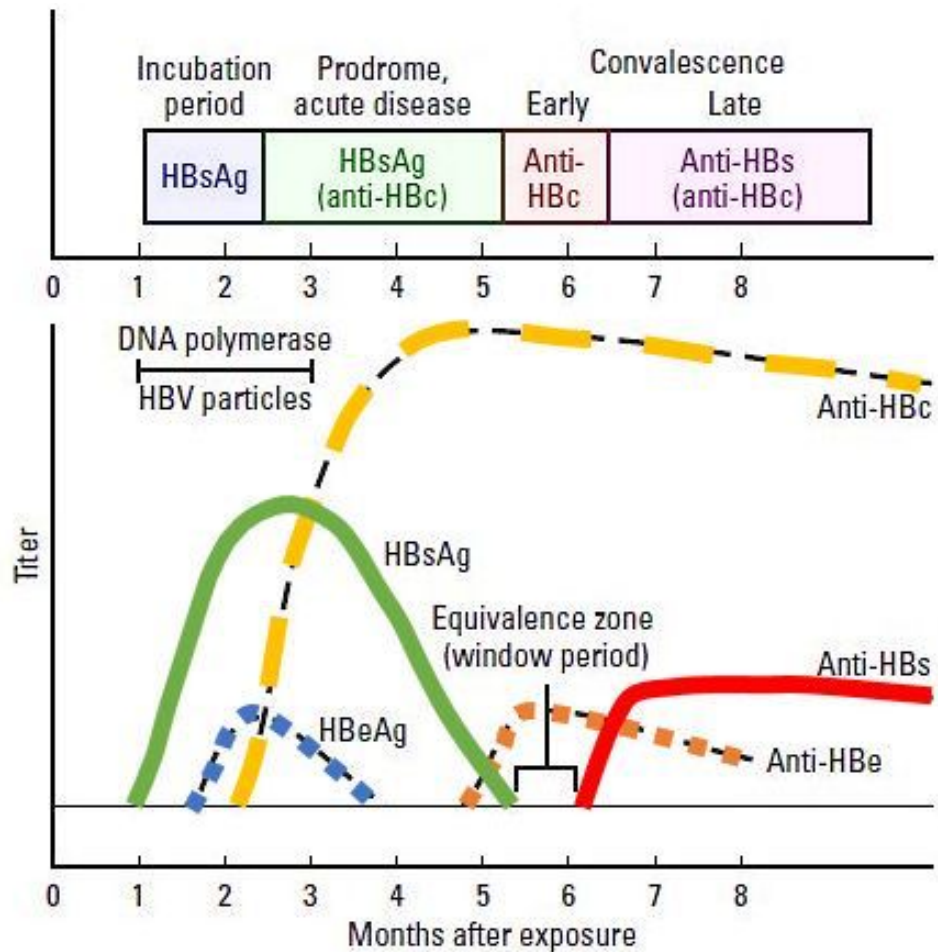


# PRESENTATIONS OF HIV IN CHILDHOOD

- LIP : lymphoid interstitial pneumonitis
  - looks like asthma
- Heme : anemia, thrombocytopenia, anemia
- Lymphadenopathy, HSM
- **Bilateral parotid gland swelling**



# HEPATITIS B VIRUS





# WEST NILE VIRUS

## □ Epidemiology

- Late summer and fall

## □ Clinical Syndrome

- Asymptomatic (80%)
- West Nile fever
- Neurologic disease (<1%)
  - Aseptic meningitis, encephalitis, acute flaccid paralysis

## □ Treatment



# BARTONELLA (B. HENSELAE)

- Cat Scratch Disease
- Epidemiology
  - Highest risk contact with kittens
- Clinical Syndrome
  - Lymphadenitis
  - Parinaud Oculoglandular syndrome
  - Hepatosplenic Bartonellosis
  - Neuro-retinitis
  - Encephalopathy
  - Fever NYD
- Treatment
  - Azithromycin for lymphadenitis
  - Doxy & Rif for eye or CNS disease



## CONFUSING CPS STATEMENTS :

1. HSV
2. Lyme Disease
3. Syphilis (previously covered)
4. Bites in day care (see prophylaxis section)



# HERPES SIMPLEX VIRUS

- Transmission :
  - Intrapartum, peripartum, post-partum
  
- **Disseminated :**
  - liver, lungs
  - Present : 10-12 days
  - Treat : 21 days +/- 6 months PO
  
- **Skin Eyes Mouth (SEM) :**
  - Present : 10-12 days
  - Treat : 14 days
  
- **CNS :**
  - Present : 17-19 days
  - Treat : 21 days IV + 6 months PO
  - Rpt LP



# HERPES SIMPLEX VIRUS

## □ **Diagnosis :**

- Viral cultures, PCR, enzyme assays (skin, immunofluorescence (skin))
- >24hr post birth
- NO serology (Maternal IgG)

## □ **Maternal History:**

- 1<sup>st</sup> episode primary
- 1<sup>st</sup> episode non-primary
- recurrent



# NEONATAL HSV TREATMENT

## □ Treatment :

### ● Low risk :

- Ie. C/S, recurrent episode
- Ix : swab, Blood
- Tx : NO acyclovir. May need monitor in hospital pending Cx

### ● HIGH RISK :

- Ie. First episode, vaginal OR C/S with ROM
- Ix : Swabs, blood
- Tx : START acyclovir
  
- If POS – LP and min Acyclovir 10 days
- If NEG – stop acyclovir
- If no PCR testing – acyclovir x 10 days



# LYME DISEASE

- *Borrelia burgdorferi*
- Tic – Ixodes
- **Early localized disease** (cellulitis)
  - 7-14 days
  - Erythema migrans (fever, malaise, ha, neck stiff, arthralgia)
- **Early disseminated disease** (bacteremia)
  - Multiple lesions, facial palsy, papilledema, meningitis, heart block)
- **Late disease** (rare)
  - Arthritis of large joints, peripheral neuropathy
- **Chronic**
  - no evidence



# LYME DISEASE

## □ **Diagnosis :**

- Not great
- Serology
- False negative in first 4 weeks

## □ **Treatment :**

- Amoxicillin TID
- Doxy BID >8yo
- 14 d PO – early, early and late disseminated
- 14-21d IV Ceftriaxone or Penicillin– meningitis, encephalitis, peripheral neuropathy, myalgia
- 28d PO – arthritis, carditis





## EXPOSURES AND PROPHYLAXIS

- Hepatitis A
- Bites in daycares
- Hepatitis B
- Chicken Pox



# HEPATITIS A VIRUS

- Vaccine : recommended in children >12 months of age
- HAV Ig : within 2 weeks of exposure
  - Infants <1yo should be treated
- Vaccine and Ig for immunocompromised patients
  
- Treatment : supportive
- Children should not return to daycare or school for 7 days from onset of illness



# HUMAN BITES IN DAYCARE

- Local wound care
- Preventative interventions
  - Tetanus immunization
  - Prophylactic abx if needed
  - HIV PEP if needed
  - HBV vaccine and Ig if needed
    - Vaccine if status unknown
    - Vaccine and Ig if one child has HBV
- HBV Follow up :
  - Finish vaccine series at 1 & 6 months
  - Check serology 4 weeks after done series



# HBV IN NEWBORN

- If Mom HBV + or unknown
  - STAT HBsAg on Mom
  - HBV vaccine (within 12 hrs) and HBIG (within 7 d)
    - NOT same injection
  - Infants <2.0 kg need 4 dose @ 0, 1, 2, & 6 months



# HCV IN THE NEWBORN



# CHICKEN POX

- Children with uncomplicated chicken pox do not need to be excluded from school (different from Red Book)
  - Children with immunodeficiency should be told
- VZIG indications :
  - Immunocompromised children
  - Susceptible pregnant women
  - Newborns of moms with VZV within 5 before or 2 days after delivery
  - Hospitalized premature >28wks infants if Mom had no protection
  - Hospitalized premature infants <28wks



## NEW CPS STATEMENTS :

- Vaccines
- Anti-virals



# ANTI-VIRAL DRUGS

- Oseltamivir (oral)
  - Not <1 yo
- Zanamivir (oral inhalation, IV)





# FLU VACCINE

## **Box 1. National Advisory Committee on Immunization recommendations for the 2018/2019 influenza season**

### **Influenza vaccination is particularly recommended for the following groups:**

People at high risk for influenza-related complications or hospitalization:

- All children 6 to 59 months of age
- All children  $\geq 6$  months of age, adolescents and adults with chronic health conditions (severe enough to require regular medical follow-up or hospital care), specifically:
  - Cardiac or pulmonary disorders, including bronchopulmonary dysplasia, cystic fibrosis, asthma
  - Diabetes mellitus and other metabolic diseases
  - Cancer, other immune-compromising conditions (due to underlying disease, therapy or both)
  - Renal disease
  - Anemia or hemoglobinopathy
  - Neurological or neurodevelopmental conditions\*
  - Morbid obesity (body mass index  $\geq 40$  kg/m<sup>2</sup>)
  - Children and adolescents (6 months to 18 years of age) undergoing prolonged treatment with acetylsalicylic acid, because of the potential increase of Reye's syndrome associated with influenza
- Indigenous peoples
- All residents of chronic care facilities
- All pregnant women, including adolescents, in all trimesters (for their own protection and to protect their infant after birth)
- All adults  $\geq 65$  years of age

People capable of transmitting influenza to individuals at high risk, specifically:

- Household contacts (adults and children) of individuals at high risk (listed above), regardless of whether the person at risk has been immunized
- Household contacts of infants  $< 6$  months of age (these infants are at high risk but too young to receive influenza vaccine)
- Members of a household expecting a newborn during influenza season
- Individuals providing regular child care to children  $\leq 59$  months of age, regardless of whether in or out of the home
- Health care and other care providers in facilities and community settings
- Others who provide services to individuals at high risk in closed or relatively confined settings

Others

- People who provide essential community services
- People in direct contact during culling operations with poultry infected with avian influenza



# VACCINE HESITANT PARENTS

- 1. Pediatricians play a key role - do not DC pt
- 2. Use motivational interview techniques
- 3. Use clear language
- 4. Address pain head on
- 5. Importance of community protection
  
- \*\*Have good resources



# CHICKEN POX

- ❑ Child with mild illness should return to school once well regardless of state of rash
- ❑ Parents of immunosuppressed children should be notified
- ❑ Parents of immunosuppressed children should seek medical advise
- ❑ Children should provide camp with history of varicella disease
- ❑ Vaccinations for exposed individuals if not contraindicated
- ❑ If camp has children with immunocompromising conditions, campers and staff with active VZV disease or have been exposed in last 21 days should be exposed.



# LIVE VACCINES?



# LIVE VACCINES

- MMR-V
- BCG
- Salmonella
- Yellow Fever



# OSTEOARTICULAR INFECTIONS

- Surgery
- Diagnosis – MRI
- Cefazolin
- When to broaden? Salmonella, H flu, MRSA
- Duration : 6 weeks IV/PO
  - Uncomplicated cases can be treated with 4 weeks



# FEVER IN RETURNING TRAVELER

- Host factors – unvaccinated, travel advise, prophylaxis, underlying medical condition
- Physical Exam
- Differential
  - Malaria
  - Typhoid
  - Diarrhea
  - Dengue
- Investigations
  - CBC
  - Malaria smears (and antigen testing) x 3
  - Blood culture
  - U/A and urine culture
  - Consider – Stool Cx, CXR, viral panel, Stool O&P, virology testing



# HUMAN PAPILLOMA VIRUS

- HPV – 9 to ALL CHILDREN 9-13
- All unimmunized female and males >13yo
- 2 dose schedule is ok for children 9-14





# 4 MOMENTS OF HAND HYGIENE



## 4 MOMENTS OF HAND HYGIENE

- Prior to patient/patient environment contact
- Before aseptic procedure
- After body fluid exposure
- After patient/patient environment contact



# QUESTIONS



## QUESTIONS

- 103) Which of the following children should be excluded from daycare?
  - 1) Child with pertussis on the 5th day of antibiotics
  - 2) An unvaccinated child who was exposed to chicken pox 3 days ago
  - 3) An 8 month old with campylobacter diarrhea
  - 4) A 2 year old with hepatitis 10 days after it started



## QUESTIONS

- 109) 2 year old child with meningitis group C. What do you treat the 5 year old sibling with?
  - a. Conjugate Vaccine alone
  - b. Rifampin alone
  - c. Conjugate Vaccine and rifampin
  - d. Cipro



## QUESTIONS

- 111) Teenager who wears contacts develops a red eye with purulent discharge. After 2 days of treatment with antibiotic drops (they might have said which one...sorry), there is no improvement. What is your next step:
  - a. Refer to optho
  - b. Switch antibiotic drops
  - c. Start iv antibiotics
  - d. Continue current antibiotic drops 2 more days with follow-up then



## QUESTIONS

- 113) Kid with varicella now has a deep bluish lesion to his leg, very painful, looks unwell, high fever. What antibiotics do you start?
  - a. penicillin, clindamycin
  - b. piperacillin, tazobactam
  - c. ampicillin, cefotaxime
  - d. vancomycin, cefotaxime



## QUESTIONS

- 95) Abx vs. observation for acute otitis media. Which of the following will be decreased:
  - a. Meningitis
  - b. Mastoiditis
  - c. Pain
  - d. Duration of fever





## QUESTIONS

- 98) Quadrivalent meningitis vaccine decreases incidence as follows?
  - a. 33% decrease age 10-. - 19
  - b. 50% decrease age 10-. - 15
  - c. 66% decrease age 0-. - 4
  - d. decrease incidence all age groups



## QUESTIONS

- 45) Commonly seen in older children with HIV:
  - a. low Ig's
  - b. reverse T helper/T suppressor ratio
  - c. anergy to diphtheria vaccine
  - d. decreased IFN production
  
- 191. All of the following are features of HIV infection EXCEPT:
  - a. hypogammaglobulinemia
  - b. CD4 leukopenia
  - c. reverse CD4/CD8 ratio
  - d. poor response to tetanus and diphtheria vaccines
  - e. poor response to TB skin test



## QUESTIONS

- 48) Child with clinical picture of pertussis. Child was fully immunized. What is your management?
  - a. culture child, treat if positive
  - b. treat only if vaccination was missed
  - c. treat if there is an immunodeficient household contact
  - d. treat now with a macrolide



## QUESTIONS

- 53) A 6y old girl presents with a 3 week history of purulent rhinorrhea and morning cough but without any facial pain. Physical examination reveals bilateral purulent rhinorrhea. Of the following , the most appropriate treatment is :
- A) amoxicillin
  - B) azithromycin
  - C) clarithromycin
  - D) pseudoephedrine



# UPTODATE

**CLINICAL PRESENTATIONS** — The clinical presentation of acute bacterial rhinosinusitis (ABRS) in children is characterized by [\[3-8\]](#):

- Persistent symptoms (nasal discharge or cough or both) for >10 days without improvement, or
- Severe symptoms (onset with temperature of  $\geq 39^{\circ}\text{C}$  [ $102.2^{\circ}\text{F}$ ] and purulent nasal discharge for  $\geq 3$  consecutive days), or
- Worsening symptoms (respiratory symptoms that worsen after initial improvement) or onset of new fever or severe headache



# QUESTIONS

- 1) Contraindications to breast-feeding include:
  - A) Hepatitis A
  - B) Hepatitis C
  - C) Mastitis
  - D) CMV
  - E) RSV



## QUESTIONS

- 2) 4 y.o. with chronically draining cervical node.  
Most likely bug:
- A) Staph Aureus
  - B) Atypical mycobacterium
  - C) Cat scratch
  - D) Tuberculosis



## QUESTIONS

- 10) Mother used IV heroin before and during her pregnancy. Her 10 month old child is now losing acquired milestones and developing bilateral spasticity. The most likely cause is:
- A) HIV
  - B) CMV
  - C) cerebral palsy
  - D) syphilis





## QUESTIONS

- 14) A woman is diagnosed with chicken pox 10 days prior to delivery. The baby is normal at birth. You would:
- A) give VZIG immediately
  - B) provide normal newborn care unless the infant develops varicella
  - C) isolate the baby from the mother



## QUESTIONS

- 16) An epileptic who has been on carbamazepine for the past year presents with otitis media. You prescribe Ceclor for the otitis. Two days later he returns with an urticarial rash. The otitis is still present. What would be the next drug of choice:
  - 
  - a) amoxicillin
  - b) erythromycin-sulfa
  - c) clarithromycin
  - d) TMP-sulfa
  - e) cefixime



## QUESTIONS

- 19) What is true regarding the spread of meningococcal disease:
  - a) household contacts are at greater risk than school contacts
  - b) penicillin is the drug of choice for prophylaxis
  - c) Neisseria meningitidis type B vaccine is use to prophylax against school outbreaks
  - d) healthcare workers should be routinely immunized against Neisseria meningitidis
  - e) a negative NP swab will determine whether or not to treat exposed individuals



# QUESTIONS

- 32) Management of a child with asplenia:
  - a) pneumococcal vaccine at 6 months
  - b) meningococcal vaccine at 2 years
  - c) antibiotic prophylaxis with daily Septra
  - d) antibiotic prophylaxis until pneumococcal vaccine given



## QUESTIONS

- 100) What is true about the conjugate tetravalent *N. meningitidis* vaccine?
- 1) It prevents 66% of meningococcal disease in all ages
  - 2) It prevents 66% of disease in children ages 10-16
  - 3) It prevents 66% of disease in children ages 0-4
  - 4) It prevents 50% of disease in children ages 10-16



## QUESTIONS

- 94) 10 yrs with purulent eye discharge. No signs or symptoms indicative of peri-orbital or orbital cellulites. Not improving after 36 hrs on cipro eye drops. What you do:
  - A. Same treatment then evaluate after 48 hrsb.
  - B. Change to Fusidic acid drops.
  - C. Admit for Abx



## QUESTIONS

- 79) You are trying to set up an infection control program in your hospital. Which intervention will result in the best form of infection control for RSV?
- A) Hand wash with soap and water
- B) Gown and glove
- C) Hand wash with alcohol
- D) Isolate everyone with respiratory symptoms



