


April 2021

# Infectious Diseases Guidelines Updates

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The University of Kansas

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## Disclosures

I have no relevant disclosures.  
Except... I work at KU.



Dr. William K. Anderson  
Assistant Professor

Why'd ya' do dat?



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## Primary care for persons with HIV

Provide timely access to care

- Multidisciplinary model

Primary reason for treatment failure is suboptimal adherence to care

U=U

- Undetectable = Untransmittable

Mitigate stigma



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### Primary care for persons with HIV

Comprehensive HIV-related medical history

- Know the lingo
  - Top, bottom, versatile (“verse”)
- STIs
- Treatment history
  - Pill charts
- Opportunistic infections (OIs)



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### Primary care for persons with HIV

Comprehensive HIV-related medical history

- Substance abuse
  - IDU
    - Needle source/sharing
- Housing stability
- Access to food
- Support systems



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### Primary care for persons with HIV

Comprehensive HIV-related medical history

- Substance abuse
  - IDU
    - Needle source/sharing
- Housing stability
- Access to food
- Support systems



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### Primary care for persons with HIV

- Labs – initial
  - HIV Ag/Ab
  - CD4 count
  - HIV resistance genotype
  - HLA B\*5701
  - CBC with differential
  - CMP
  - Lipid panel
  - HgbA1c
- UA with microscopy
- GC/chlamydia NAAT
  - All mucosal sites!
- Syphilis Ab or RPR
- Trichomonas NAAT (females)
- IGRA or PPD
- Hepatitis serologies
  - HAV TOTAL Ab
  - HBsAb and HBsAg
  - HCV Ab
- Pregnancy test



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### Treatment of Gonococcal Infections 2020

Uncomplicated urogenital or anorectal infection

- Ceftriaxone
  - 500 mg IM x 1 dose (<150 kg)
  - 1 gram IM x 1 dose (≥150 kg)
- If chlamydial infection has not been excluded
  - Doxycycline 100 mg p.o. twice daily x 7days



Update to CDC's Treatment Guidelines for Gonococcal Infection, 2020



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### Primary care for persons with HIV

Vaccines

- Influenza – HD?
- Pneumococcal
  - Pevnar
  - Pneumovax (8 weeks after above)
- COVID-19 → **YES!!!**



Only YOU can prevent the flu!!  
Do NOT touch the Tzone!  
Mucous membranes of your eyes, nose or mouth  
henrythehand.com



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### Primary care for persons with HIV

Vaccines

- Hepatitis A
- Hepatitis B
  - Always check post-vaccination HBsAb
  - May require repeat vaccination
- HPV
  - Should be offered to 27–45-year-old who are unvaccinated
- Shingrix



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### Primary care for persons with HIV

Cancer screening

- Cervical Pap
  - Annually 21 to 29 years old
  - If 3 consecutives are normal, then f/u in 3 years
- Anal Pap
  - Receptive anal intercourse, abnormal cervical Pap, or genital warts



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### Primary care for persons with HIV

Cancer screening

- Colonoscopy – same as general population
- Mammography – same as general population



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### Primary care for persons with HIV

STI screening

- GC/chlamydia NAAT –
  - Every 3 to 6 months\* v/ annually
    - All mucosal sites!
- Syphilis Ab or RPR
  - Every 3 to 6 months\* v/ annually
- Trichomonas NAAT (females)
  - Annually

\*sexual activities, presence of other STIs in patient/partner, and local community STI

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### Pre-Exposure Prophylaxis

PrEP

- Taking once daily FDC HAART (**Truvada** or **Descovy**)
- Reduces risk of HIV infection
- Risk reduction
  - >90% sexual exposure
  - 70% IVDU
- Must be taken EVERY day!

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**PrEP**

Truvada (tenofovir disoproxil fumarate/emtricitabine)  
 Descovy (tenofovir alafenamide/emtricitabine)  
 TAF (tenofovir alafenamide)

- Do **NOT** use if main risk for HIV is receptive vaginal sex
  - Lack of data demonstrating efficacy



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**PrEP**

Daily PrEP continues to be endorsed in the U.S.

- Unlike in Europe, where “on-demand” PrEP is sometimes used
  - “intermittent,” “non-daily,” or “event-driven”



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**PrEP**

“On-demand” PrEP

- “2-1-1” schedule.
  - 2 pills 2-24 hours before sex, 1 pill 24 hours after the first dose, and 1 pill 24 hours after the second dose
  - Evidence of effective protection for MSM
  - Unknown efficacy: heterosexual, IVDU, and transgender

**NOT** currently endorsed by CDC



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**PrEP**

Patient selection

- All candidates for **PrEP**
  - HIV negative
  - AND**
  - High risk behavior



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**PrEP**

PROUD Study

- 13 sexual health clinics in UK
- MSM, >18 y.o. (n=544)
- Anal sex without condoms
- Past 90 days and going to in future 90 days
- Two arms
  - Truvada @ baseline
  - Truvada @ 1 year



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**PrEP**

#PrEPWORKS

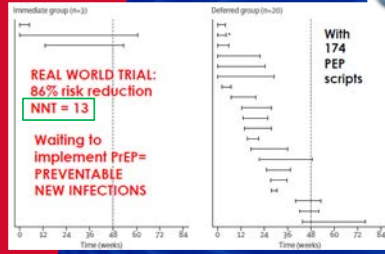
Immediate group (n=23)

Deferred group (n=20)

With 174 PEP scripts

REAL WORLD TRIAL:  
86% risk reduction  
NNT = 13

Waiting to implement PrEP = PREVENTABLE NEW INFECTIONS



Lancet. 2016 Jan 2; 387(10013): 53-60.

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**PrEP**

PrEP to prevent HIV

- NNT 13



- statin to prevent MI
  - ▣ NNT 39
- statin to prevent CVA
  - ▣ NNT 125
- ASA to prevent MI
  - ▣ NNT 2000
- ASA to prevent CVA
  - ▣ NNT 10,000

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**PrEP**

Patient selection

- Men who have sex with men (MSM)
  - Any male sex partner in past 6 months
  - Not monogamous with HIV(-) MSM

**AND at least 1 of the following**

- Anal sex without condoms in past 6 months
- Any STI in past 6 months
- Ongoing sex partner HIV(+)MSM



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**PrEP**

Patient selection

- Heterosexual Men/Women
  - Sexually active in past 6 months
  - Not monogamous with HIV(-) partner

**AND at least 1 of the following**

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**PrEP**

**Patient selection**

**AND at least 1 of the following**

- Bisexual male
- Anal sex w/o condom and/or STI in past 6 months
- Infrequent condom use with partner who has substantial HIV risk
- IVDU, MSM
- Ongoing sex partner HIV(+)



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**PrEP**

**Patient selection**

- Intravenous Drug Users (IVDU)
  - IVDU in past 6 month
  - AND at least 1 of the following**
  - Sharing injection/drug preparation equipment in past 6 months
  - Risk of sexual acquisition
    - See previous slides



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**PrEP**

**Lab evaluation**

- HIV Ab/Ag (4<sup>th</sup> generation)
  - Baseline (within 1 week of starting PrEP)
  - Every 3 months
- BUN/Creatinine (or eGFR)
  - Baseline
  - Every 6 months



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**PrEP**

Lab evaluation (continued)

- HBV screening (HBsAg, HbC IgM, HbC Total Ab, HBsAb)
  - Vaccinate accordingly
- HCV Ab
  - Baseline
  - Annually for IVDU



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**PrEP**

Lab evaluation (continued)

- STI screen: RPR, NAAT GC/Chlamydia (oral, urine, rectal)
  - Baseline
  - Every 3 months MSM w/ recent STI or multiple sexual partners
  - Every 6 months for heterosexual or IVDU
- Pregnancy
  - Baseline
  - Every 3 months

Prevention Is Better Than Cure. Especially When Something Has

**No Cure.**



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**ASK ME ABOUT**



**PrEP**



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## Community Acquired Pneumonia

Laboratory evaluation

- Sputum Gram stain and culture – **ALL**
- Blood cultures IFF (any of the following)
  - Empirically treated for MRSA or Pseudomonas
  - Previously infected with MRSA or Pseudomonas especially prior RTI
  - Hospitalized & received IV antibiotics in the last 90 days

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## Community Acquired Pneumonia

Laboratory evaluation (continued)

- Urinary antigen testing
  - Epidemiologic factors
    - Outbreak
    - Travel
  - Severe CAP
- Procalcitonin → 



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## Community Acquired Pneumonia

Outpatient treatment – **NO** comorbidities\* or MRSA/Pseudomonas risk factors#

- Amoxicillin 1 g p.o. three times daily
- AND**
- Doxycycline 100 mg p.o. twice daily
- OR**
- Macrolide (IFF local pneumococcal resistance <25%)

\*chronic heart, lung, liver, or renal disease; diabetes mellitus; alcoholism; malignancy; or asplenia  
# prior respiratory isolation MRSA or Pseudomonas or recent (90 days) hospitalization AND IV antibiotics



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## Community Acquired Pneumonia

Outpatient treatment – **NO** comorbidities\* or MRSA/Pseudomonas risk factors#

- ▣ Macrolide (IFF local pneumococcal resistance <25%)
  - ▣ Azithromycin 500 mg p.o. x 1, then 250 mg p.o. daily
  - ▣ Clarithromycin 500 mg twice p.o. daily
  - ▣ Clarithromycin ER 1,000 mg p.o. daily

\*chronic heart, lung, liver, or renal disease; diabetes mellitus; alcoholism; malignancy; or asplenia  
#prior respiratory isolation MRSA or Pseudomonas or recent (90 days) hospitalization AND IV antibiotics



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## Community Acquired Pneumonia

Outpatient treatment – **WITH** comorbidities\* or MRSA/Pseudomonas risk factors#

- ▣ Amoxicillin/clavulanate or oral 3<sup>rd</sup> generation cephalosporin
  - ▣ Drug/dosing options next slide
- ▣ **AND**
- ▣ Doxycycline or macrolide
- ▣ **or**
- ▣ Respiratory fluoroquinolone
  - ▣ Levofloxacin 750 mg p.o. daily
  - ▣ Moxifloxacin 400 mg p.o. daily
  - ▣ Gemifloxacin 320 mg p.o. daily



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## Community Acquired Pneumonia

Outpatient treatment – **WITH** comorbidities\* or MRSA/Pseudomonas risk factors#

- ▣ Amoxicillin/clavulanate or oral 3<sup>rd</sup> generation cephalosporin
  - ▣ Amoxicillin/clavulanate 500/125 mg p.o. three times daily
  - ▣ Amoxicillin/clavulanate 875/125 mg p.o. twice daily
  - ▣ Amoxicillin/clavulanate 2,000/125 mg p.o. twice daily
  - ▣ Cefpodoxime 300 mg p.o. twice daily
  - ▣ Cefuroxime 500 mg p.o. twice daily
  - ▣ Cefdinir 300 mg p.o. twice daily?



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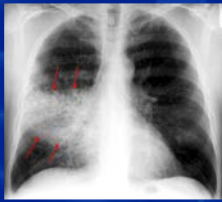
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## Community Acquired Pneumonia

**Inpatient treatment – non-severe**

- β-Lactam
  - Ampicillin/sulbactam 3 g IV every 6 hours
  - Cefotaxime 2 g IV every 8 hours
  - Ceftriaxone 2 g IV daily
  - Ceftaroline 600 mg IV every 12 hours
- AND**
- Macrolide
  - Azithromycin 500 mg p.o./IV daily
  - Clarithromycin 500 mg p.o. twice daily
- or**
- Respiratory fluoroquinolone
  - Levofloxacin 750 mg p.o./IV daily
  - Moxifloxacin 400 mg p.o./IV daily



<https://www.med-ed.virginia.edu>



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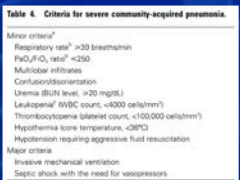

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## Community Acquired Pneumonia

**Inpatient treatment – severe**

- β-Lactam
  - Ampicillin/sulbactam 3 g IV every 6 hours
  - Cefotaxime 2 g IV every 8 hours
  - Ceftriaxone 2 g IV daily
  - Ceftaroline 600 mg IV every 12 hours
- AND**
- Macrolide
  - Azithromycin 500 mg p.o./IV daily
  - Clarithromycin 500 mg p.o. twice daily
- or**
- β-Lactam
  - Ampicillin/sulbactam 3 g IV every 6 hours
  - Cefotaxime 2 g IV every 8 hours
  - Ceftriaxone 2 g IV daily
  - Ceftaroline 600 mg IV every 12 hours
- AND**
- Respiratory fluoroquinolone
  - Levofloxacin 750 mg p.o./IV daily
  - Moxifloxacin 400 mg p.o./IV daily

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## Community Acquired Pneumonia

**Inpatient treatment – severe**

- β-Lactam
  - Ampicillin/sulbactam 3 g IV every 6 hours
  - Cefotaxime 2 g IV every 8 hours
  - Ceftriaxone 2 g IV daily
  - Ceftaroline 600 mg IV every 12 hours
- AND**
- Macrolide
  - Azithromycin 500 mg p.o./IV daily
  - Clarithromycin 500 mg p.o. twice daily

**Inpatient treatment – severe**

- β-Lactam
  - Ampicillin/sulbactam 3 g IV every 6 hours
  - Cefotaxime 2 g IV every 8 hours
  - Ceftriaxone 2 g IV daily
  - Ceftaroline 600 mg IV every 12 hours
- AND**
- Respiratory fluoroquinolone
  - Levofloxacin 750 mg p.o./IV daily
  - Moxifloxacin 400 mg p.o./IV daily



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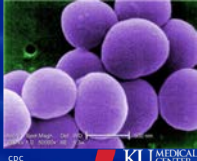
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## Community Acquired Pneumonia

**Inpatient treatment – non-severe or severe**

- Prior respiratory MRSA or recent hospitalization and IV antibiotics
  - Vancomycin 15 mg/kg IV every 12 hours
    - Adjust based on levels
  - Linezolid 600 mg p.o./IV every 12 hours
- Obtain cultures/nasal MRSA PCR
- De-escalation if cultures/PCR negative



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## Community Acquired Pneumonia

**Inpatient treatment – non-severe or severe**

- Prior respiratory Pseudomonas or recent hospitalization and IV antibiotics
  - Piperacillin-tazobactam 4.5 g every IV 6 hours
  - Cefepime 2 g IV every 8 hours
  - Ceftazidime 2 g IV every 8 hours
  - Imipenem 500 mg IV every 6 hours
  - Meropenem 1 g IV every 8 hours
  - Aztreonam 2 g IV every 8 hours
- Obtain cultures
- De-escalation if cultures negative



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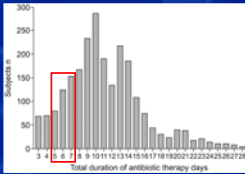
## Community Acquired Pneumonia

**Duration of therapy**

- 5 days – most
- 7 days – MRSA or Pseudomonas
- Longer courses
  - Meningitis, endocarditis, or metastatic foci
  - Infection with less-common pathogens
    - *Burkholderia pseudomallei*
    - *Mycobacterium tuberculosis*
    - Endemic fungi

**Follow up CXR**

- Not routinely needed



European Respiratory Journal 2010, 36: 128-134

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## Asymptomatic Bacteriuria

**Definition**


- >1 species of bacteria in urine culture
  - ≥10<sup>5</sup> CFU/mL or ≥10<sup>4</sup> CFU/L
- Irrespective of pyuria
- Absence of signs or symptoms UTI

**Common finding**  
Does not require antibiotic therapy for most

**UTI MYTHS AND MISCONCEPTIONS**

- UTI is a lab diagnosis
- Treat asymptomatic bacteriuria
- Routinely image pyelonephritis
- Cranberry juice prevents UTI
- Phenazopyridine is effective
- Use cipro for cystitis
- Positive urine culture = UTI

<https://emergencymedicines.com>



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## Asymptomatic Bacteriuria

**Who do you screen???**

- Pregnant women
- Endoscopic urologic procedures associated with mucosal trauma
- Renal transplants who have had renal transplant surgery >1 month prior
- Febrile neutropenia\*

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## Asymptomatic Bacteriuria

**Who do you screen???**

- Pregnant women
  - Screen for AND treat
  - Culture guided antibiotics
  - Duration of therapy 4 to 7 days

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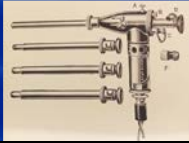
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## Asymptomatic Bacteriuria

Who do you screen???

- Endoscopic urologic procedures associated with mucosal trauma
  - Screen for AND treat
  - Culture guided antibiotics
  - Short course (1 or 2 doses)
  - Initiated 30-60 minutes before the procedure



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## Asymptomatic Bacteriuria

Confused elder patient

- Do NOT just blame it on a UTI
- Aggressively look for other causes
- Polypharmacy

Malodorous urine – its pee, duh

- Have you ever used a men’s restroom at a truck stop???



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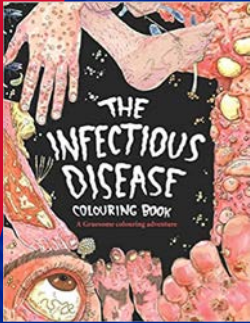
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### References

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MMWR Morb Mortal Wkly Rep. 2020;69(50):1911. Epub 2020 Dec 18

USPHS. Preexposure Prophylaxis for the Prevention of HIV Infection in the United States – 2017. A Clinical Practice Guideline  
<https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf>

Am J Respir Crit Care Med. 2019 Oct 1; 200(7):e45-e67. doi: 10.1164/rccm.201908-158137

*Clinical Infectious Diseases*, 2007 Mar 1;44 Suppl 2(Suppl 2):S27-72.

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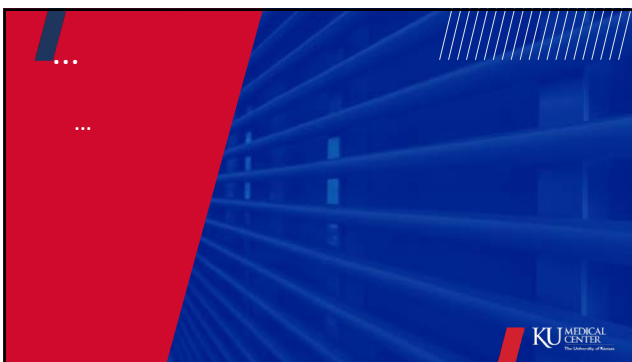
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