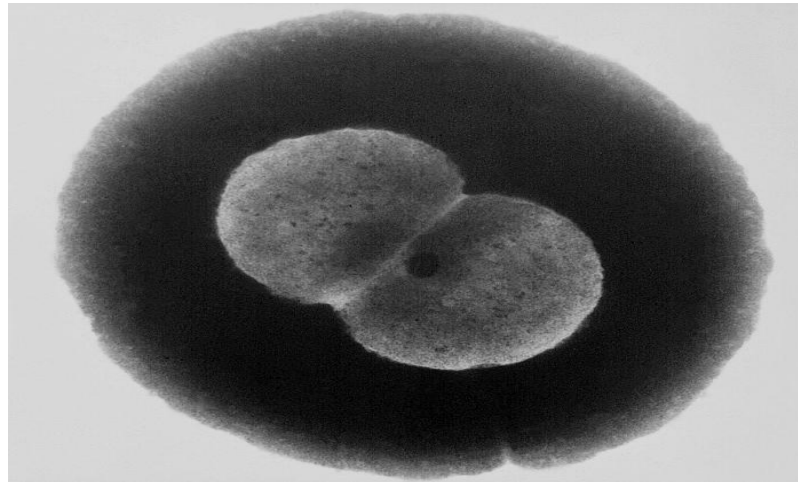


# Introduction to Communicable Disease Surveillance and Investigation in North Carolina



# Bacterial Sexually Transmitted Infections (STIs)



Victoria Mobley, MD  
Medical Epidemiologist

# Learning Objectives

- List NC reportable sexually transmitted infections (STIs)
- Identify CDC approved treatment regimens for STIs
- Locate the case definitions for STIs
- Locate guidance for reporting STIs in NC EDSS



# Reportable STIs in North Carolina

## Bacterial

- Chlamydia
- Gonorrhea
- Pelvic Inflammatory Disease (PID)
- Non-Gonococcal Urethritis (NGU)
- Lymphogranuloma Venereum (LGV)
- Granuloma Inguinale
- Chancroid
- Syphilis\*

## Viral

- Hepatitis A virus
- Hepatitis B virus
- Hepatitis C virus
- Human Immunodeficiency Virus (HIV)

\* Discussed in another lecture

# Chlamydia

## Cause

- Gram-negative intracellular bacterium- *Chlamydia trachomatis*
- Majority of infections are asymptomatic

## Presentation

- Cervicitis, urethritis, proctitis or PID
- Children born to infected women can develop ophthalmia neonatorum and pneumonia

## Diagnosis

NAAT

## Treatment (non-PID infection)

- Azithromycin 1 gm oral x 1 dose, OR
- Doxycycline 100 mg oral BID x 7 days

## Follow-up

- Repeat testing in 3 months
- TOC (>3-4 week after treatment) **ONLY** in pregnant women



# Gonorrhea

## Cause

Gram negative intracellular diplococci

*Neisseria gonorrhoeae*

- Presents as urethritis (“the drip”), cervicitis, pharyngitis, proctitis
- Complications: PID and DGI and Ophthalmia neonatorum

## Diagnosis

- Gram Stain of male urethral discharge
- NAAT
- Culture (preferred method if concern for treatment failure)

## Treatment

- Ceftriaxone 250 mg IM x 1 dose **PLUS**
- Azithromycin 1 gm oral x 1 dose  
**OR** doxycycline 100 mg oral BID x 7 days

## Follow-up

- Repeat testing in 3 months
- TOC 1 week after treatment if an alternative regimen used



# Pelvic Inflammatory Disease

**Caused when infections like chlamydia or gonorrhea spread from the lower to upper reproductive tract**

- Endometritis and/or Salpingitis
- Tubo-ovarian abscess
- Pelvic peritonitis
- Fitz Hugh Curtis Syndrome

**Presentation can range from mild to severe symptoms, including**

- Lower abdominal pain
- abnormal bleeding
- Vaginal discharge
- Pain during intercourse



# PID

## Diagnosis

Sexually active or high-risk women with  $\geq 1$  of following:

- Cervical motion tenderness
- uterine tenderness
- adnexal tenderness

## Treatment (mild cases)

- Ceftriaxone 250 mg IM x 1 dose
  - **PLUS**
- Doxycycline 100 mg oral BID x 14 days
- $\pm$  Metronidazole 500 mg oral BID x 14 days

## Treatment (moderate to severe cases)

- Consider medical consultation to assess need for hospitalization and/or intravenous antibiotics



# Non-Gonococcal Urethritis

## Cause

Chlamydia, Mycoplasma spp,  
Ureaplasma spp, Trichomonas, HSV

## Diagnosis

Meet the criteria for urethritis  
Negative Gram stain for GNID/  
NAAT

## Treatment

Azithromycin 1 gm oral x 1 dose, **OR**  
Doxycycline 100 mg oral BID x 7 days

## Recurrent or persistent symptoms

Assess for medication compliance  
Consider treating for organisms not  
originally covered



# Lymphogranuloma Venereum

## Cause

*Chlamydia trachomatis* serovars L1-3

## Presentation

Causes a self-limited genital /rectal ulcer or papule at inoculation site and tender unilateral inguinal/femoral LAD (Buboes)

Can also cause proctocolitis

## Diagnosis of exclusion

Limited availability of NAATs able to distinguish between serovars

## Treatment

Doxycycline 100 mg oral BID x 21 days

## Follow-up

Clinical follow-up until symptoms resolve



# Granuloma Inguinale (Donovanosis)

## Cause

Intracellular gram-negative bacterium-  
*Klebsiella granulomatis*

## Presentation

Painless, slowly progressive ulcerative  
genital or perineal lesions

Subcutaneous granulomas  
(pseudobuboes) might also occur

Can extend to extragenital sites

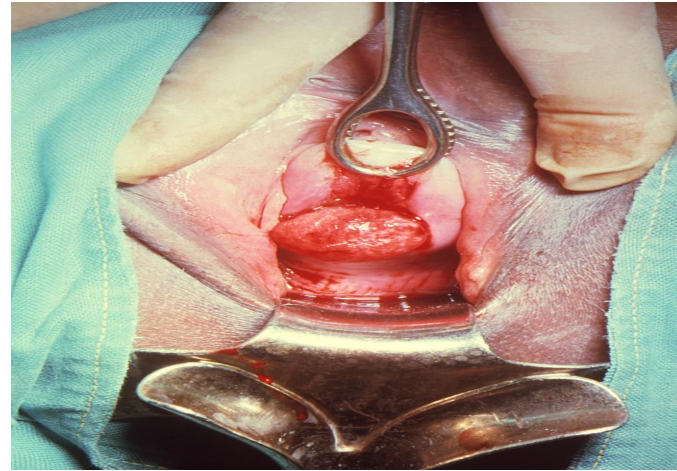
## Diagnosis

Identification of Donovan bodies in  
infected tissue

## Treatment

Doxycycline 100 mg oral BID  $\geq$ 3 wks

Relapse can occur 6-18 months after  
effective therapy



# Chancroid

## Cause

Fastidious gram-negative coccobacillus-  
*Haemophilus ducreyi*

## Presentation

Painful genital ulcers and enlarged lymph nodes (buboes)

Uncommon in the U.S.

When to suspect:

- genital ulceration(s) and
- tender regional lymph nodes
- in a HSV and syphilis negative individual

## Treatment (any of the following)

Azithromycin 1 gm oral x 1 dose,

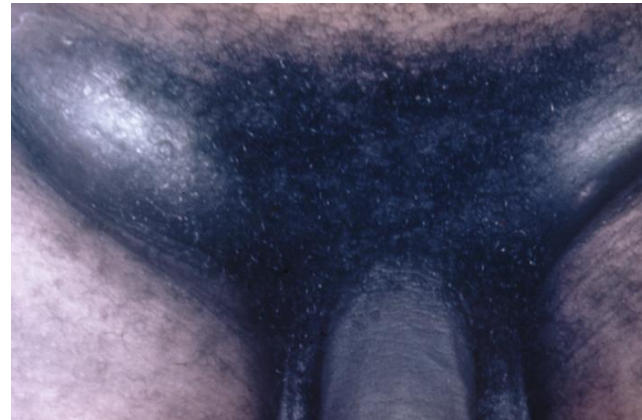
Ceftriaxone 250 mg IM x 1 dose,

Ciprofloxacin 500 mg oral BID x 3 days

Erythromycin 500 mg oral TID x 7 days

## Follow-up

3 and 7 days following treatment initiation





# Case Definitions

<http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/toc.html>



## 2012 North Carolina Division of Public Health Communicable Disease Manual

Public Health Management of Reportable  
Diseases and Conditions

NC Division of Public Health • Epidemiology Section  
Communicable Disease Branch  
1902 Mail Service Center  
Raleigh NC 27699-1902  
919 - 733 - 3419 (main number – 24 hours)  
919 - 715 - 4699 (secure fax)

TABLE OF CONTENTS	
<a href="#">Diseases &amp; Conditions Reportable in North Carolina</a>	<a href="#">Other Diseases of Public Health Significance (CA-MRSA, Influenza, Norovirus)</a>
<a href="#">Reporting Forms</a>	<a href="#">NC Laws &amp; Rules</a>
<a href="#">Investigation Steps</a>	<a href="#">Agreement Addenda</a>
<a href="#">Case Definitions</a>	<a href="#">Conferences &amp; Training Opportunities</a>
<a href="#">Press Releases</a>	<a href="#">Communicable Disease Course</a>
<a href="#">Outbreak Investigations</a>	<a href="#">Technical Assistance &amp; Training Program</a>
<a href="#">Appendices</a>	<a href="#">Sample Policies/Procedures &amp; Standing Order Templates</a>
<a href="#">NC Electronic Disease Surveillance System (NC EDSS)</a>	<a href="#">Additional Communicable Disease Manuals (HBV, Rabies, STD, TB, Vaccine-Preventable)</a>

# Report Forms

<http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/toc.html>



**2012  
North Carolina  
Division of Public Health  
Communicable Disease Manual**

**Public Health Management of Reportable  
Diseases and Conditions**

NC Division of Public Health • Epidemiology Section  
Communicable Disease Branch  
1902 Mail Service Center  
Raleigh, NC 27699-1902  
**919 - 733 - 3419 (main number – 24 hours)**  
919 - 715 - 4699 (secure fax)

TABLE OF CONTENTS	
<a href="#">Diseases &amp; Conditions Reportable in North Carolina</a>	<a href="#">Other Diseases of Public Health Significance (CA-MRSA, Influenza, Norovirus)</a>
<a href="#">Reporting Forms</a>	<a href="#">NC Laws &amp; Rules</a>
<a href="#">Investigation Steps</a>	<a href="#">Agreement Addenda</a>
<a href="#">Case Definitions</a>	<a href="#">Conferences &amp; Training Opportunities</a>
<a href="#">Press Releases</a>	<a href="#">Communicable Disease Course</a>
<a href="#">Outbreak Investigations</a>	<a href="#">Technical Assistance &amp; Training Program</a>
<a href="#">Appendices</a>	<a href="#">Sample Policies/Procedures &amp; Standing Order Templates</a>
<a href="#">NC Electronic Disease Surveillance System (NC EDSS)</a>	<a href="#">Additional Communicable Disease Manuals (HBV, Rabies, STD, TB, Vaccine-Preventable)</a>