Syphilis

Old disease New challenges

Test Treat and Trace

Is that all there is?

Dr Diane Rowling

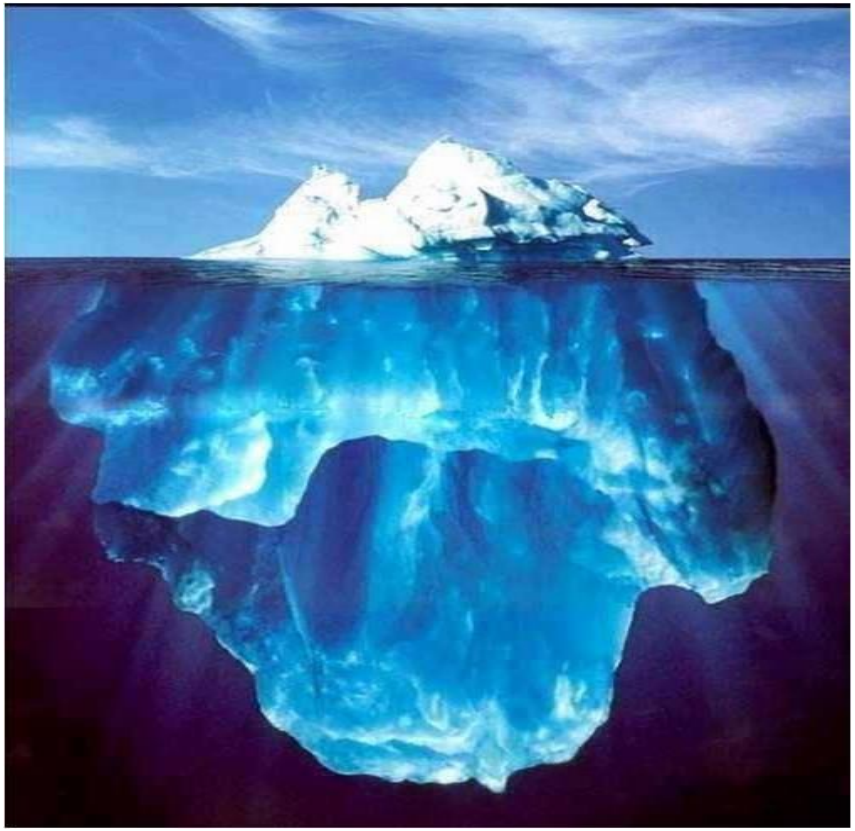
Sexual Health and HIV Service

Metro North

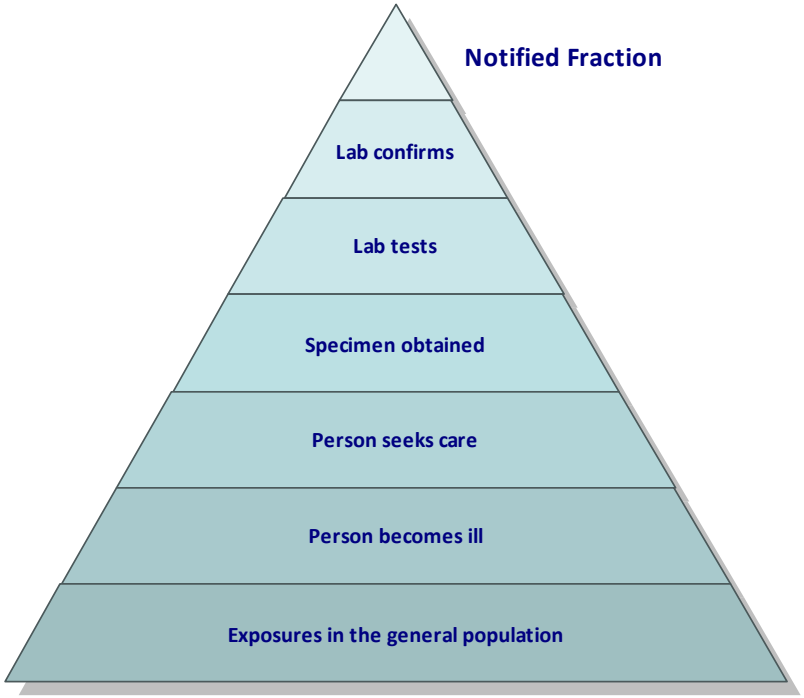
24 August 2019

STI Epidemiology

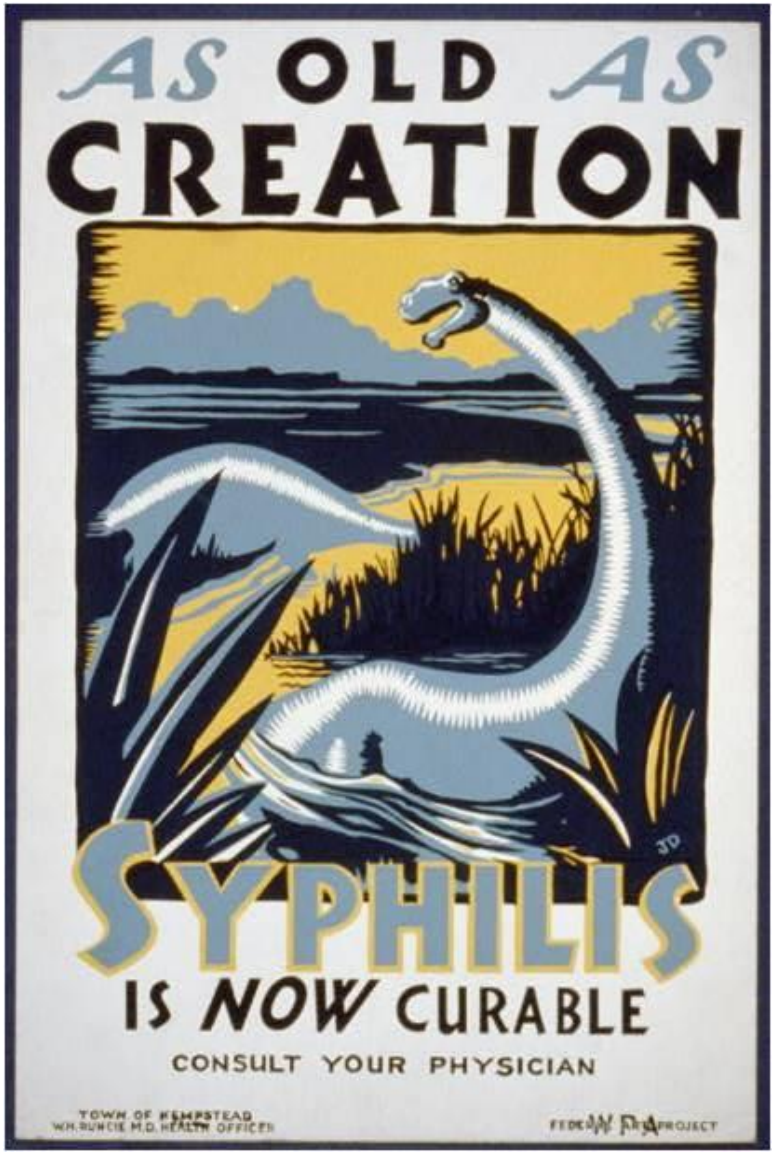
The tip of the iceberg



Surveillance Pyramid



Syphilis



- Easy sexual transmission
  - Including oral, anal, vaginal
- Potential serious health sequelae
- Congenital transmission
  - Spontaneous abortion
  - Stillbirth
  - Neonatal infection
- Role in HIV transmission

Epidemiology of syphilis in Australia: moving toward elimination of infectious syphilis from remote Aboriginal and Torres Strait Islander communities?

James S Ward, Rebecca J Guy, Snehal P Akre, Melanie G Middleton, Carolien M Giele, Jiunn Y Su, Craig A Davis, Handan Wand, Janet B Knox, Patricia S Fagan, Basil Donovan, John M Kaldor and Darren B Russell

MJA •Volume 194 Number 10 •16 May 2011

The National Plan to Eliminate Syphilis from the United States - Executive Summary

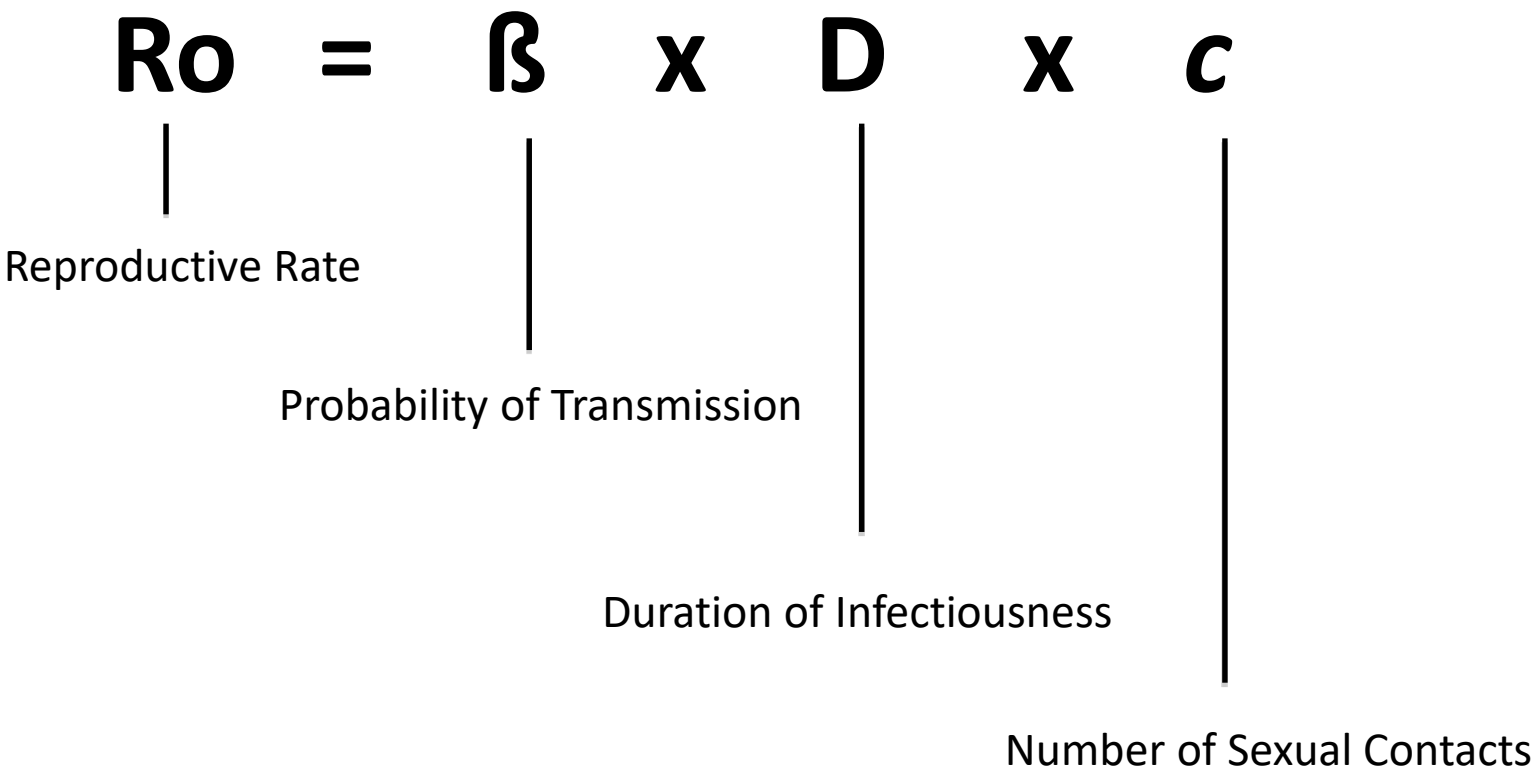
This webpage reflects activities that ended in December 2013

www.cdc.gov

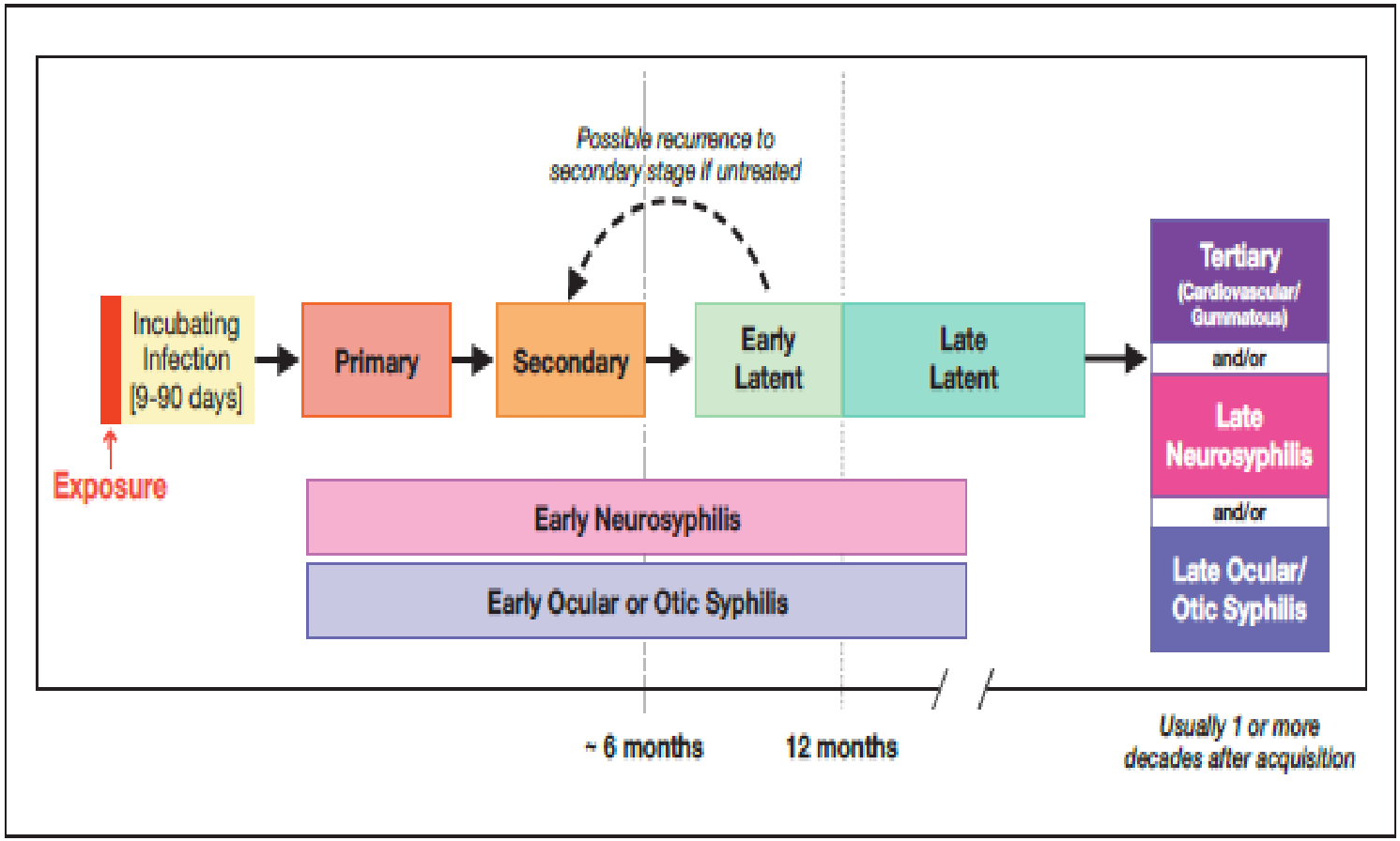
Syphilis management issues circa 2008

- Established infection in MSM and young indigenous networks
- At risk population awareness and access to care
- Heterosexual bridging
- Partner management
  - Most contacts remain untreated through traditional contact tracing methods
- Persistent infection in sexual networks maintains transmission
  - ?syphilaxis
- Clinical workforce
  - Delays in diagnosis
  - Treatment
- Need for novel approach to screening and treatment

How did we get here?



The Natural History of Syphilis



New York City Dept Health and Mental Hygiene The Diagnosis and Management of Syphilis: An Update and Review March 2019 www.nycptc.org

Diagnosis, Management and Prevention

Asymptomatic case detection
High index suspicion clinical signs
Careful interpretation serology
Appropriate treatment
Coexisting STIs/HIV
Management sexual contacts
Clinical and serological monitoring
Encourage protective behaviours

Adapted from Syphilis: an update and review March 19
www.nycptc.org

Syphilis: who to test

- Anyone seeking a checkup for STIs
  - If a checkup involves an HIV test, then you should include syphilis
  - People you might previously only have offered a chlamydia test
- Women who are pregnant or might become pregnant
- MSM: at least annually, up to 4 times a year.
- Aboriginal and Torres Strait Islander people
- Sex workers
- Anyone with a rash that you can’t immediately explain away
- Anyone with any type of genital skin lesion
- Any sexually active person with a skin manifestation

Slide written by Dr Nicholas Medland, Sexual Health Physician Melbourne Sexual Health, 2018

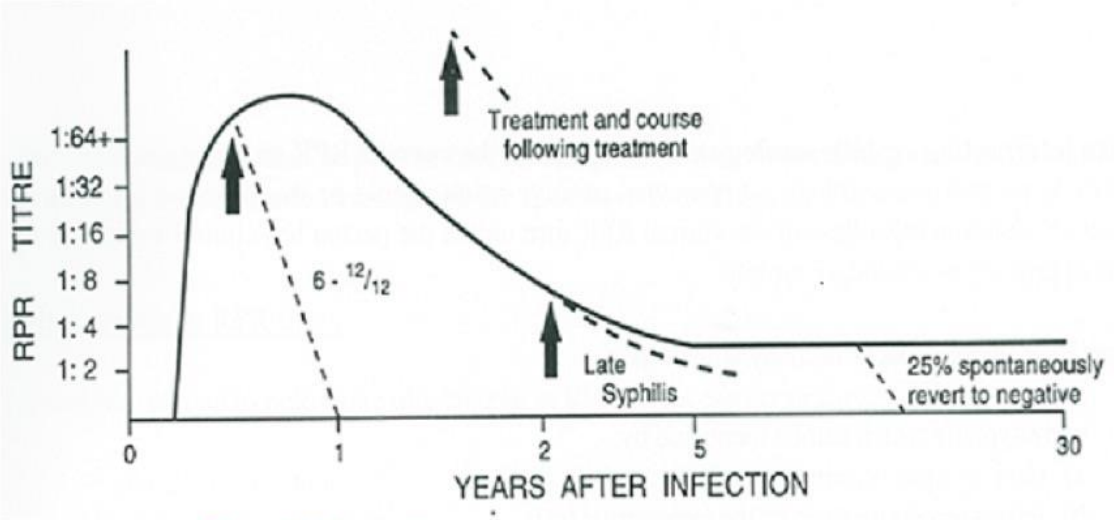
Testing

- Direct lesion based testing
  - Dark field examination –limited/no availability
  - Treponemal PCR
- Serology
  - RPR, VDRL – nonspecific reagin tests
- Specific treponemal tests
  - TPHA, TPPA
  - Treponemal EIA – (screening assay sensitivity at the expense of specificity)
  - FTA-Abs
- POCT
  - limitations

Interpreting syphilis serology

- Serology can be difficult to interpret
- Correlation with
  - History and examination
  - Epidemiology
  - Previous treatment and serology history
  - Repeat serology

Syphilis Diagnostics

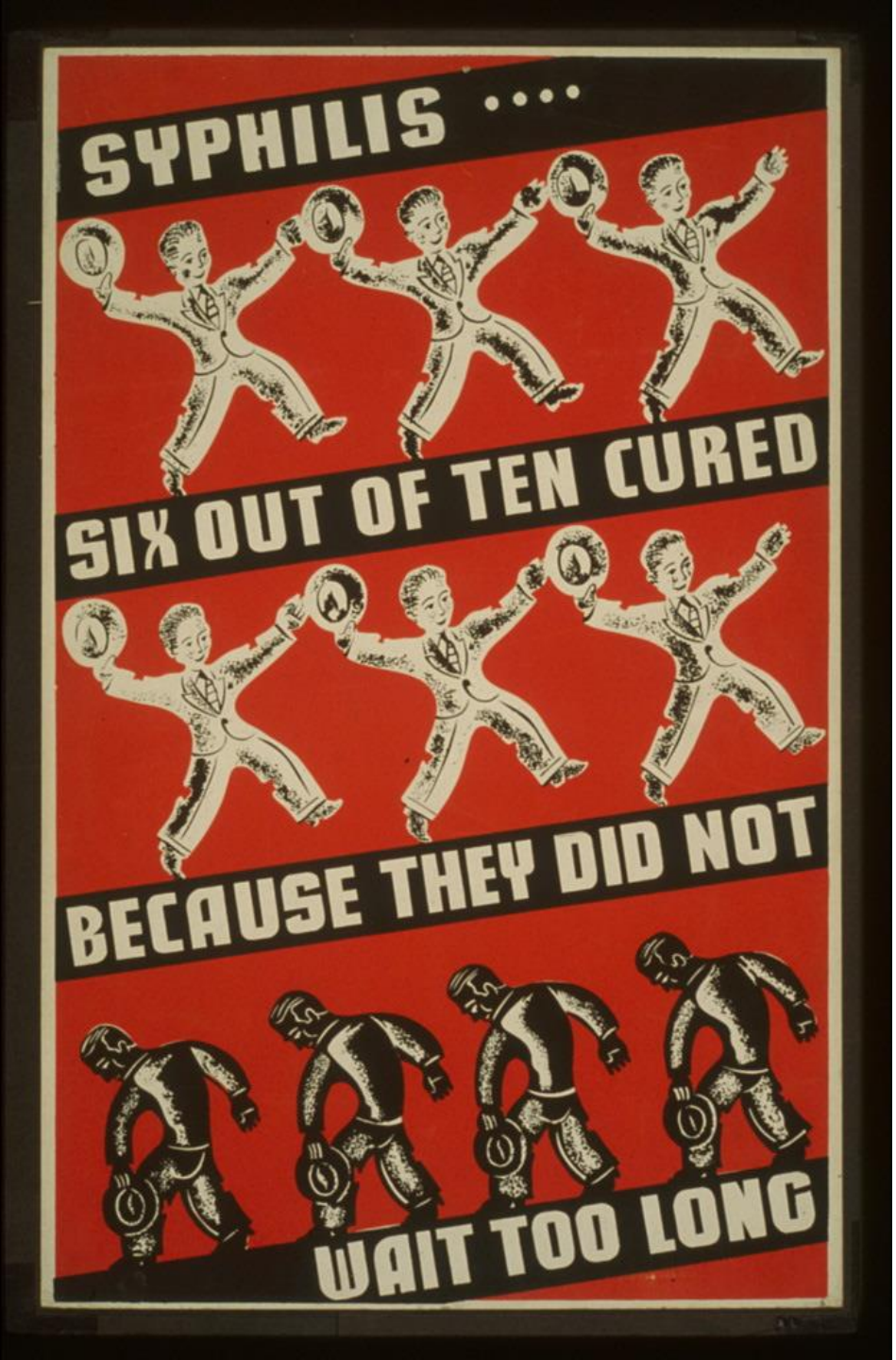


PCR positive

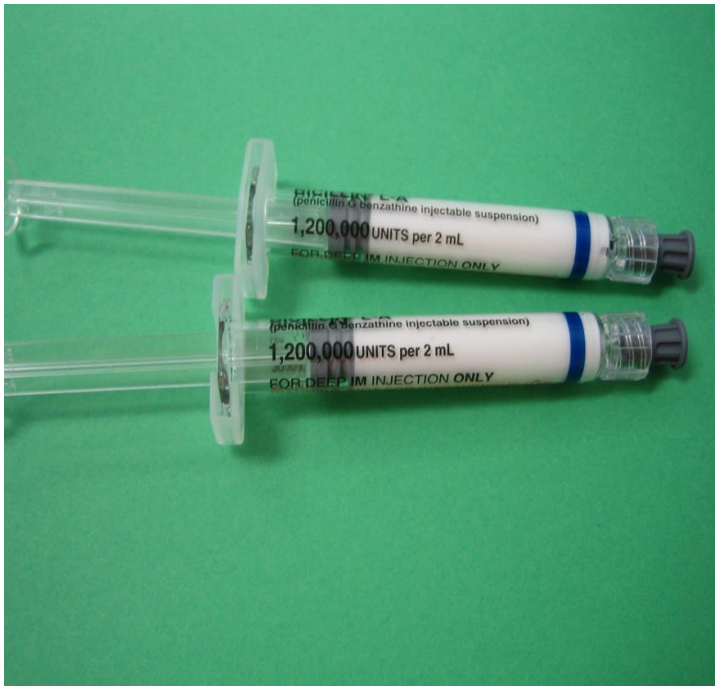
RPR rising

RPR falling

EIA positive for life



Long acting Penicillin is the treatment of choice for uncomplicated syphilis



Treatment of uncomplicated syphilis

- Benzathine penicillin 1.8 g IM stat for primary and secondary syphilis (and for early latent syphilis)
- Benzathine penicillin 1.8g IM weekly for 3 weeks for late latent syphilis
- Procaine penicillin IMI daily is alternate regimen but adherence is major issue
- Doxycycline generally should be reserved for non-pregnant, HIV-negative penicillin allergic patients with primary, secondary or latent syphilis
- Azithromycin resistance
- Penicillin-allergic patients with tertiary disease, congenital disease, pregnancy or HIV should preferably be treated with penicillin after desensitisation

Table 11. Effectiveness of Penicillin vs. Nonpenicillin Adult Syphilis Treatment Regimens[23]

Syphilis Stage	Intramuscular Benzathine Penicillin G	Oral Doxycycline (or Tetracycline)	Parenteral Ceftriaxone*
Primary, or Secondary	✔	• Limited studies, but many years of successful use • Acceptable alternative when penicillin is contraindicated or unavailable due to supply shortage	Comparable to benzathine penicillin in several small studies, but requires daily intramuscular/intravenous dosing of 1-2g daily x 10-14 days [a]
Early Latent Late Latent, Latent of Unknown Duration	✔		• Not well studied • Optimal dose and duration of therapy has not been defined
Syphilis During Pregnancy	✔	**Contraindicated**	• Not well studied
Syphilis in Persons Living with HIV	✔	• Not well studied • Should be used only in conjunction with close serologic and clinical follow-up • If there is significant risk of poor adherence, patients should undergo penicillin desensitization and treatment with standard stage-appropriate CDC-recommended penicillin regimen	

✔ Efficacy of benzathine penicillin is supported by strong observational studies, and decades of experience in achieving clinical resolution of symptoms, eliminating sexual transmission and preventing late sequelae.

[a] Although allergic cross-reactivity is rare with third generation cephalosporins in patients with a history of penicillin allergy, the use of ceftriaxone is contraindicated in persons with a history of an IgE-mediated penicillin allergy (eg, anaphylaxis, Stevens-Johnson syndrome and toxic epidermal necrolysis).[23]

The Optimal Dose of Penicillin When Treating Syphilis in HIV-Infected Persons: Enough, Already?

Susan Tuddenham and Khalil G. Ghanem
Division of Infectious Diseases, Johns Hopkins University School of Medicine, Baltimore, Maryland (See the HIV/AIDS Major Article by Ganesan et al on pages 653–60.)

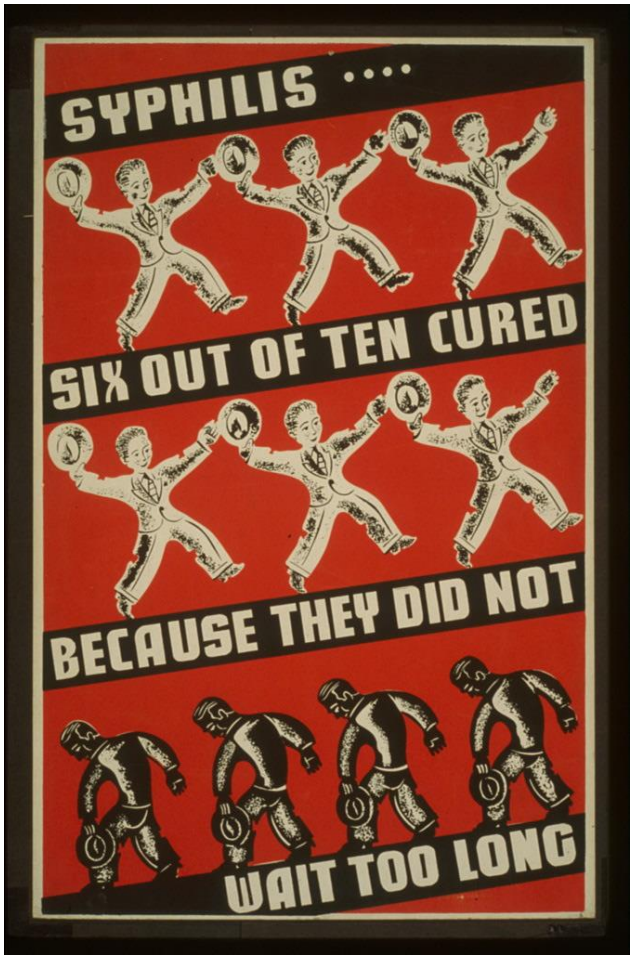
EDITORIAL COMMENTARY • CID 2015:60 (15 February) • 661

HIV/AIDS • CID 2015:60 (15 February) • 653

A Single Dose of Benzathine Penicillin G Is as effective as multiple doses of Benzathine Penicillin G for the Treatment of HIV-Infected Persons With Early Syphilis

Anuradha Ganesan,1,2 Octavio Mesner,1 Jason F. Okulicz,1,3 Thomas O'Bryan,1,3 Robert G. Deiss,1,4 Tahaniyat Lalani,1,5
Timothy J. Whitman,1,2 Amy C. Weintrob,1,2 Grace Macalino,1 and Brian K. Agan1; for the Infectious Disease Clinical
Research Program HIV/STI Working Group a 1
Infectious Disease Clinical Research Program, Uniformed Services University

Syphilis treatment in pregnancy



- Penicillin is treatment in pregnancy – long acting
- Penicillin allergy
  - desensitize
- Treat before 36/40
- Jarisch Herxheimer reaction
- Risk of re-infection from untreated partner
- Rescreening in pregnancy

Treatment errors

Do not use short acting penicillin in uncomplicated syphilis

Syphilis contact tracing

How far back?

Primary syphilis: duration of symptoms + 3 months

Secondary syphilis: duration of symptoms + 6 months

Early latent: 12 months

Late latent: long term partners only

Presumptively treat all sexual contacts of patients with primary or secondary syphilis regardless of serology with benzathine penicillin 1.8g IMI, stat.

(Australian STI Management Guidelines http://www.sti.guidelines.org.au)

Patient management & education

- No sexual contact for 7 days after treatment is administered
- No sex with partners from last 3 months (primary syphilis) or 6 months (secondary) until they are tested & treated if required
- Sexual partners are presumptively treated
- Patients need follow up including repeat RPR at 3 months, and then 6 & (if necessary) 12 months to measure response to treatment
- Consider testing for HIV and other STIs at 3 months (if not performed at first visit or retesting post-window period.

(Australian STI Management Guidelines http://www.sti.guidelines.org.au)

Syphilis in the time of PREP

- Rise in STIs predated scaling up of PrEP
  - From early 2000s
  - Effective ART

- PrEP has the potential to decrease STIs
  - STI testing standard of care with PrEP use
  - Targeting sexual networks associated with high risk of transmission
  - Increased focus on more frequent testing and partner management

(Missed) opportunities

Ro = ß x D x *c*

Reproductive Rate

Probability of Transmission

Duration of Infectiousness

Number of Sexual Contacts

Syphilis is no laughing matter!