



# Visualizing a High-Risk Syphilis Network Using Partner Services and Social Network Analysis - Southwest Virginia, 2025



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# Conflict of Interest

The authors declare no conflicts of interest regarding this presentation.

# Learning Objectives

- Describe the role of disease intervention specialists (DIS) and partner services in the investigation of syphilis cases
- Apply social network visualization concepts to understand the scope and complexity of partner networks
- Identify the strengths and limitations of partner services in capturing complex partner relationships

# Why This Matters

- Syphilis and congenital syphilis rates are rising nationally and in Virginia.
- Southwest Virginia saw a 203% increase in early syphilis and a 207% increase for all other stages between 2022 and 2024.
- Networks among individuals with overlapping risk factors—such as substance use and incarceration—pose unique challenges for disease control.
  - Recent incarceration spiked by 183%
  - Stimulant/opioid use increased 74%
  - Injection drug use (IDU) increased 131%
  - Sex with a person who injects drugs (PWID) increased 106%
  - Transactional sex increased 100%

# Role of Disease Intervention Specialists (DIS)

- Conduct case management and analysis as part of public health investigations
- Provide partner services to people diagnosed with syphilis, HIV or another high priority STI - including testing, treatment, and linkage to care
- Collaborate with clinic providers and community partners to support testing and treatment per CDC guidelines
- Identify and address barriers to care through referral and follow up

# Syphilis Surveillance Stages

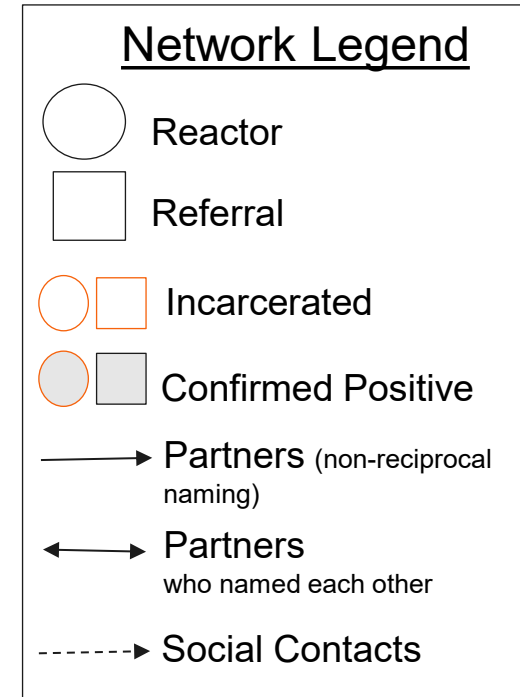
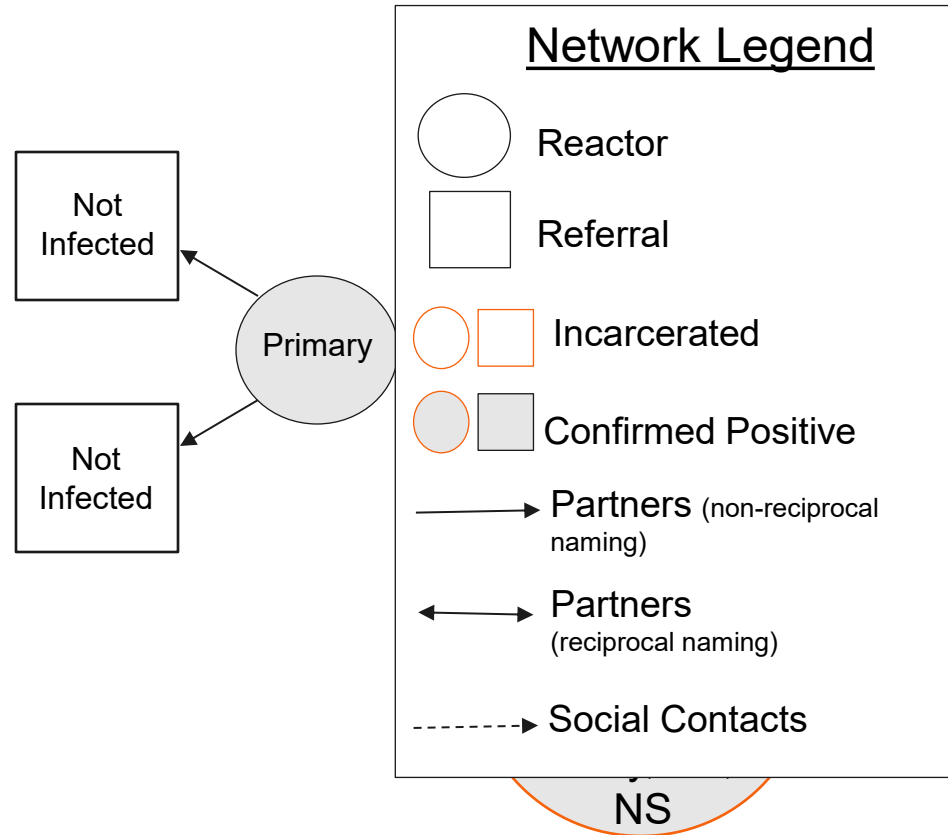
- Primary
- Secondary
- Early, Non-primary, Non-secondary
- Late or Unknown Duration



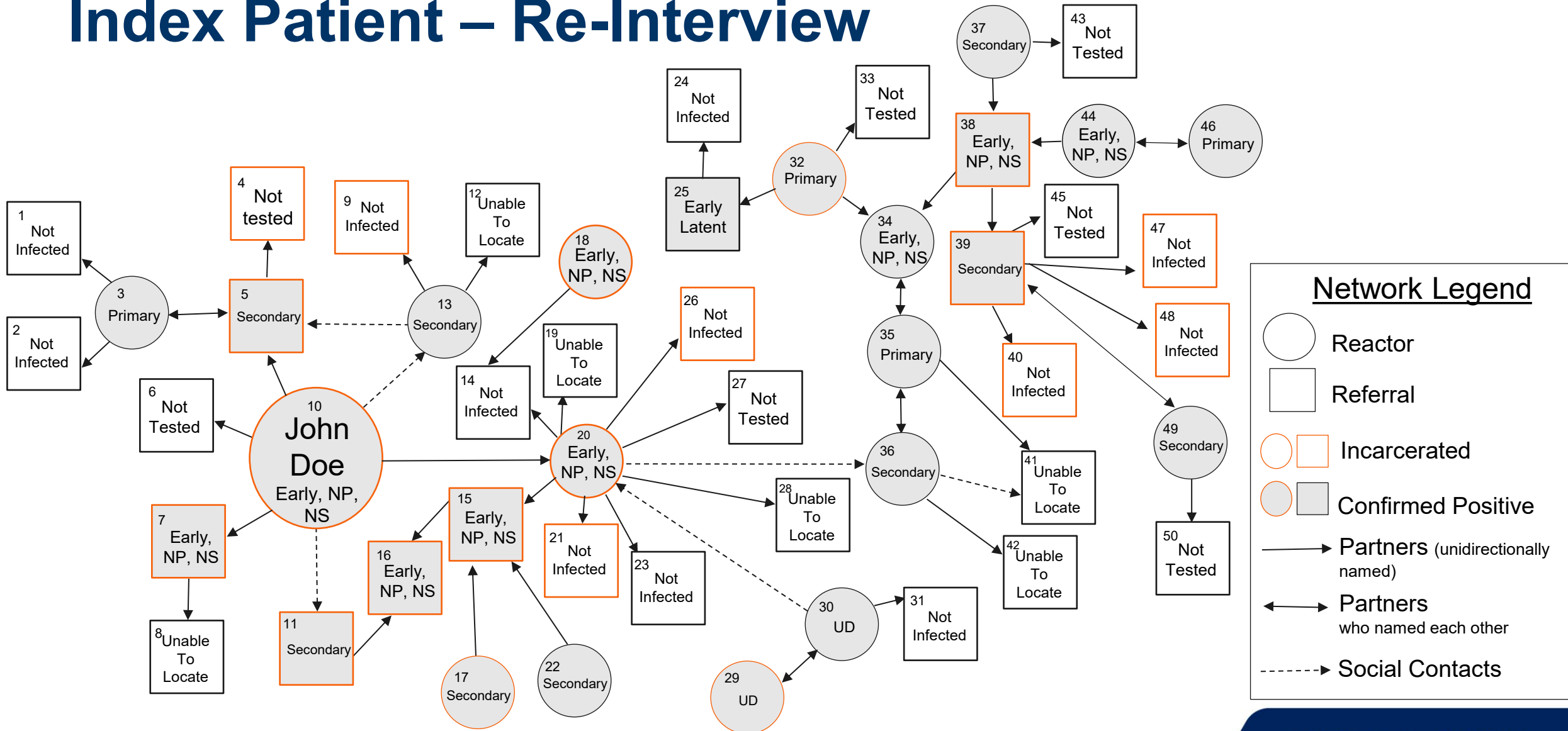
Most infectious



# Index Patient – Initial Interview



# Index Patient – Re-Interview



# Infection Outcomes And Social Network Characteristics

- **Network size:** 50 individuals with 25 infected individuals
- **Co-infections:** Hepatitis C (n=9), Hepatitis A (n=1), prior HIV (n=2)
- **Timeframe:** 06/2024-09/2025
- **Geographic Concentration:** West Piedmont
- **Behavioral factors:** Drug use (n=21), Injection drug use (n=7), transactional sex (n=4)
- **Incarceration:** 32 individuals with 13 infected individuals



# Limitations and Strengths

## Limitations

- High prevalence of substance use
- High prevalence of incarceration
- Transient population

## Strengths

- Collaboration with local jails and Virginia Harm Reduction Coalition
- Rapport built with individuals
- Successful completion of re-interviews

# Questions?

## Presenter contact information

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