Financial Disclosures:

No financial interests or relationships to disclose.

Presenter Contact Information:

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Booby Trap

Syphilis and Gonorrhea

She may look clean - but

Pick-ups
"Good time" girls
Prostitutes

Spread syphilis and gonorrhea
You can't beat the Axis if you get VD

http://www.mentalfloss.com/blogs/archives/120278
A Brief History of Partner Services

1930s
- Known in the 1930s as contact tracing
- First used for syphilis
- Later used for gonorrhea, HIV, chlamydia and other zoonotic, vector borne, and foodborne disease

1980s
- Partner services was also known as "partner notification" in the 1980s.
- Partner services for HIV used the terminology “HIV Partner Counseling and Referral Services (PCRS).”

2008
Most recent history, with the 2008 MMWR recommendations, the Centers for Disease Control and Prevention (CDC) refers to this public health activity as "partner services" for all diseases.
A Brief Note on Original Interviews

- Public Health Theoretical Models of Behavior
  - Health Belief Model
  - Theory of Reasoned Action and Planned Behavior
  - Transtheoretical Model

- Narrative Listening
  - Story Telling
  - Active Listening
  - Critical Thought
### A Brief Note on Partner Elicitation

- **Name First Methodology**

<table>
<thead>
<tr>
<th>Foundation</th>
<th>NAME</th>
<th>MADEUP PATIENT NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of partners:</strong> 3</td>
<td></td>
<td>FSE: 1/1/2018</td>
</tr>
<tr>
<td><strong>Behaviors:</strong> oral (G/R), vaginal, anal (I/R)</td>
<td></td>
<td>LSE: 3/14/2022</td>
</tr>
<tr>
<td><strong>Settings:</strong> homes, hotels, bars, outside</td>
<td></td>
<td>Freq: 2-3x per week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type: Vaginal, Oral</td>
</tr>
<tr>
<td></td>
<td>EXPOSURE</td>
<td>LOCATING</td>
</tr>
<tr>
<td></td>
<td>FSE: 1/1/2018</td>
<td>Indianapolis, IN</td>
</tr>
<tr>
<td></td>
<td>LSE: 3/14/2022</td>
<td>555-4356 (cell)</td>
</tr>
<tr>
<td></td>
<td>Freq: 2-3x per week</td>
<td>Apartment building – live together</td>
</tr>
<tr>
<td></td>
<td>Type: Vaginal, Oral</td>
<td>Works at Great Harvest Bread Company on Salisbury St</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uses Facebook and Instagram</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Met thru friends</td>
</tr>
<tr>
<td></td>
<td>LOCATING</td>
<td>CLUSTERING</td>
</tr>
<tr>
<td></td>
<td>Indianapolis, IN</td>
<td>Best friend – has sex with same partner</td>
</tr>
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<td>CLUSTERING</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td></td>
<td>Best friend – has sex with same partner</td>
<td>White, 6ft, blonde, male</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brown eyes, haircut is very short</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diamond earrings, always wears a cross necklace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Has a tattoo on L forearm of eagle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drives a red Subaru</td>
</tr>
</tbody>
</table>

**NAME**: 
- **MADEUP PATIENT NAME**
- **EXPOSURE**
- **LOCATING**
- **CLUSTERING**
- **DESCRIPTION**

**EXPOSURE**
- **FSE:** 1/1/2018
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**LOCATING**
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**DESCRIPTION**
- White, 6ft, blonde, male
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- Drives a red Subaru
What is Visual Case Analysis?

- Epidemiological Tool for Partner Service Providers
  - Analyze
  - Disease Intervention
  - Disease Transmission
  - Plan of Action

- Visual Framework
Key Components of Visual Case Analysis

• Minimum, average, and maximum durations of symptoms or incubation period

• Basic Assumptions

• Criteria for Related Cases

• Ghosting and the Hierarchy
Key Components of Visual Case Analysis

• Minimum, average, and maximum durations of symptoms or incubation period

  • The incubation period is the timeframe in which someone will develop a chancr (chancroid) once they have been exposed to a chancr (for example: the minimum someone could develop a primary chancr after exposure to a primary chancr would be 10 days).

  • The latency period is the timeframe the patient may take to go from primary symptoms to secondary symptoms (for example: after a primary chancr heals without treatment, the patient may experience a period of time where no syphilis signs or symptoms are occurring; this on average last four weeks, and then the patient will develop secondary symptoms).

<table>
<thead>
<tr>
<th></th>
<th>Incubation Period</th>
<th>Primary Syphilis</th>
<th>Latency Period</th>
<th>Secondary Syphilis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum duration</td>
<td>10 days</td>
<td>1 week</td>
<td>0 weeks</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Average duration</td>
<td>21 days</td>
<td>3 weeks</td>
<td>4 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Maximum duration</td>
<td>90 days</td>
<td>5 weeks</td>
<td>10 weeks</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Total maximum</td>
<td>3 months</td>
<td>1 month and 1 week</td>
<td>2 months and 2 weeks</td>
<td>1 month and 2 weeks</td>
</tr>
</tbody>
</table>
Key Components of Visual Case Analysis

- Minimum, average, and maximum durations of symptoms or incubation period can translate into interview periods

  For primary syphilis, we begin our interview period prior to the onset of primary symptoms. We want to maximize the timeframe in which we are looking for partners to ensure we are capturing partners who may have been exposed to a primary chancre that was unnoticed by the infected patient. Our goal is to interrupt the chain of transmission to treat partners before they develop symptoms.

  - Maximum duration of the Incubation Period + Maximum duration of an untreated primary chancre = Interview period for primary syphilis
  - 3 months + 1 month + 1 week = 4 months and 1 week
  - The interview period for primary syphilis begins 4 months and 1 week prior to the onset of the primary chancre.

  For secondary syphilis, we adhere to the same rules as before. We want to maximize the timeframe in which we are looking for partners to ensure we are capturing partners who may have been exposed to a primary chancre or any infectious secondary symptom that went unnoticed by the infected patient. Our goal is to interrupt the chain of transmission to treat partners before they develop symptoms.

  - Maximum duration of the Incubation Period + Maximum duration of an untreated primary chancre + Maximum duration of a latency period + Maximum duration of untreated secondary symptoms = Interview period for secondary syphilis
  - 3 months + 1 month + 1 week + 2 months + 2 weeks + 1 month + 2 weeks = 8 months and 1 week
  - The interview period for secondary syphilis begins 8 months and 1 week prior to the onset of the secondary symptoms (body rash, palmar/plantar rash, mucous patches, C. lata, alopecia)
Key Components of Visual Case Analysis

Criteria for Related Cases
• Must be infectious
• Must be compatible
• Must be reasonable

Basic Assumptions
• Syphilis is acquired by someone with a primary chancre
• The incubation period was 3 weeks
• The chancre lasted 3 weeks
• The latency period lasted 4 weeks
Key Components of Visual Case Analysis

Ghosting
• Technique to find source/spread relationships
• Uses natural history of syphilis (averages)
• Targeted disease intervention

Ghosting Hierarchy
• Existing primary chancre
• Historical primary chancre
• Ghosted primary chancre
• Secondary symptom
What is Source/Spread Analysis?

• Narrative of disease transmission
  • **Source:** an infected person who transmitted disease to an uninfected person
  • **Spread:** an uninfected person who acquired disease from an infected person

• Creates the “how” and “why,” while documenting “who,” “what,” “when,” and “where.”
What is Source/Spread Analysis?

Johnny (infected) has sex with Heather (uninfected). Heather develops a chancre a month later.  
\textit{Johnny is the source, Heather is the spread in this scenario.}

Samuel (infected) has sex with Johnny (uninfected). Johnny develops a chancre a month later.  
\textit{Samuel is the source, Johnny is the spread in this scenario.}
What is Source/Spread Analysis?

Key pieces of a source/spread analysis narrative

1. Identify critical period for OP
2. Then put hypotheses of partners that fall within critical period
3. Identify who is the source for the OP’s infection
4. Identify who are spreads of the OP’s infection
5. Justify this using ghosting/VCA/Interview/partner outcomes and update as needed
6. Upload final VCA to case investigation and update SO/SP as needed
What is Source/Spread Analysis?


2. OP’s partner Heather and Samuel fall within this 3-month period.

3. The OP presented with a penile chancre x3 days on 3/8/2020 (onset 3/5/20). Pt was exhibiting no other s/s of syphilis. Pt has no negative testing that can shorten the critical or interview periods; was treated on 3/10/2020. P1 Heather tested positive on 4/3/2020 with an RPR of 1:32, +EIA, received preventive treatment, with vaginal chancre present. P1 Samuel tested positive on 2/15/2020 with an RPR of 1:64, +EIA, and a rectal chancre for 7 days at the time of exam, received treatment on 2/17/2020.

4. Based on the sexual exposure dates of the P1s to OP, DIS believes the source of OP’s infection is Samuel. The VCA shows that P1 Samuel had a chancre present at the time P1 and OP reported having sex. OP then developed a chancre within the expected timeframe, and he claims to have had sex with his P1 Heather during the timeframe the chancre was present. Based on the VCA, and Heather’s symptoms and testing results, Heather is a spread from Johnny’s infection.
Johnny Smith
Self-Referral

HISTORY

<table>
<thead>
<tr>
<th>Patient</th>
<th>Initial Reason for Exam</th>
<th>Date</th>
<th>RPR</th>
<th>EIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnny Smith</td>
<td>Self-Referral</td>
<td>10/02/2019</td>
<td>1:32</td>
<td>+EIA</td>
</tr>
</tbody>
</table>

BIC 2.4mu x1

VCA Pocket Assistant

Durations

Minimum Duration
Average Duration
Maximum Duration

Plotting the Facts

1. Months of the year
2. Reason for exam
3. Symptoms
4. Exposure dates
5. Name of the patient
6. Medical history
7. Critical period
Johnny Smith
Self-Referral
10/02/2019

<table>
<thead>
<tr>
<th>Patient Initiated Reason for Exam</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnny Smith</td>
<td>NR RPR</td>
</tr>
<tr>
<td>Self-Referral</td>
<td>03/08/2020</td>
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**Infectious Syphilis Epidemiologic Analysis Chart**

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**VCA Pocket Assistant**

- Minimum Duration
- Average Duration
- Maximum Duration

**Plotting the Facts**

- Months of the year
- Reason for exam
- Symptoms
- Exposure dates
- Critical period

<table>
<thead>
<tr>
<th>Patient History</th>
<th>Exposure Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnny Smith</td>
<td>03/08/2020</td>
</tr>
</tbody>
</table>

**Source Spread Analysis**

- 10/02/2019 NR RPR
- 03/08/2020 RPR 1:32 +EIA
- BIC 2.4mu x1

**Dates**

- FSE - 9/3/2019
- LSE - 2/25/2019

**Patient Information**

- Johnny Smith
- Self-Referral

**Test Results**

- 10/02/2019: NR RPR
- 03/08/2020: RPR 1:32 +EIA
- BIC 2.4mu x1

**References**

1. Patient Medical Records
2. Interview Record (CDC 7354)
Let’s Practice!

You will need...
- VCA Chart (blank)
- VCA Pocket Assistant
- Colored pens or pencils: black, red, green, orange, blue
- VCA Exercises
THANK YOU!

Presenter Contact Information:

Emily Fussell (she/her)
STD Control Program Manager

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