Universal STI Screening in the Pediatric Emergency Department

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Objectives:
• Screening-based interventions in emergency department (ED) setting
  • What are the barriers?
  • What’s out there?
• Why screen for gonorrhea and chlamydia in the ED?
• Current study
  • Methods
  • Preliminary results

I have no relevant financial relationships to disclose or conflicts of interest to resolve.

Screening-based interventions in the pediatric ED
• Pressure to treat acute health problems vs. desire to prevent future health problems among patients and the community at large.¹
  • ED overcrowding is a national issue.
  • Routine screening for medical and psychiatric conditions imposes additional burdens on efficient ED flow.

Screening in the ED
• Smoking
• Mental Health
• HIV

Smoking cessation:
• Prevalence of tobacco use in ED users > national average
  • Brief tobacco cessation intervention for parents of PED patients:
    • Dr. Melinda Mahabee-Gittens and colleagues
  • At 3-month follow-up:
    • at least one quit attempt (59% vs. 34%; p<.01)
    • seriously thinking about quitting (68% vs. 37%; p<.001)²
Mental health:

- Suicidal adolescents more likely to utilize the ED for routine care in weeks to months before an attempt.
  - Month before attempting suicide: 50%
  - Week before: 25%

- Study done in our ED revealed that most parents (82%) and children (75%) feel screening would be acceptable.³

HIV Screening:

- The CDC and AAP recommend HIV testing for any patient being tested for other STIs.

- Dr. Joy Lippe and colleagues developed interventions in our ED to increase screening:
  - January 2012: <3% screened
  - Peak 88% screened
  - Sustained rates of 65-80% over several months
  - Number of tests done: 570
  - Number of preliminarily positive patients: 3

Why screen for gonorrhea and chlamydia in the pediatric ED?

- USPSTF recommends gonorrhea and chlamydia screening for all sexually active teens.⁴
- Screening females <25 years old⁵
  - Beneficial and cost-effective prevention services
  - Underutilized
  - CDC recommends targeted male screening in high prevalence settings.⁶

- Adolescents rely on emergency services for their health care.⁹
- Male adolescents have a predominance of visits to EDs.¹⁰
- PEDs see a population with moderately high STI prevalence
  - Screening asymptomatic adolescents may be an important component of STI reduction initiatives.³

Local STI prevalence in females

<table>
<thead>
<tr>
<th>STI</th>
<th>&lt;22 at CCHMC</th>
<th>&gt;18 at STD clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichomonas</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
STI Prevalence: CCHMC 14-21 years vs ADD Health 18-26 years (Percentages)

- Gonorrhea and Chlamydia screening:
  - Is the prevalence in the asymptomatic population significant enough to warrant universal screening?
  - Would adolescents be open to being screened?
  - Can we get follow up with patients regarding their results to assure proper treatment and preventative counseling?

Our goal is to keep you healthy!

You had tests performed on ___/____/______.

Your results should be back in about 3-4 days.

Tell your doctor or nurse today what number we should call to reach you. We will contact you in a few days if your results are positive. You may also call Rachael at 513-226-6573 to get your test results. Please call between 9 AM and 5 PM.

********************************************

Gonorrhea and Chlamydia screening:

% of Female ED Patients Tested for STIs with Documentation of a Confidential Phone Number
Current Study:

An assessment of asymptomatic gonorrhea and chlamydia prevalence in the Pediatric Emergency Department and patient-related predictors of gonorrhea and chlamydia screening refusals

Aims

1. To determine the prevalence of gonorrhea and chlamydia infections in the asymptomatic adolescent population (ages 14-21 years) in our urban pediatric emergency department.
2. To determine the barriers to universal STI screening in this population.

Aim #1:

• We anticipate that the prevalence of asymptomatic gonorrhea and chlamydia infection among the ED adolescent population will be significant, thus further supporting the future implementation of universal STI screening in the ED setting.

• Over time, this could
  1. Decrease the prevalence of gonorrhea and chlamydia and their secondary complications
  2. Ease the ED burden by decreasing STI-related visits

Aim #2:

• Predictors of screening refusals identified in this study will inform future work that will explore solutions for minimizing screening refusal rates.

• This will lead to increased detection.

Study Design and Setting:

• Prospective study
• Convenience sample
• Adolescents aged 14-21 that present to the ER with non-genitourinary complaints.
• Cincinnati Children’s Hospital Medical Center Emergency Department.

Inclusion Criteria:

• Male and female patients
• Ages 14-21 years
• Presenting at our Burnet location (main hospital)
Exclusion Criteria:

- Genitourinary complaint (symptomatic)
- Critically ill or an injury preventing participation
- Non-English speaking
- Developmentally delayed
- Altered mental status due to:
  - Injury
  - Ingestion of substances of abuse or alcohol
  - Medications for conscious sedation

Methods:

- Patients approached to participate
- Parents/guardians asked to leave the room.
- Patient consent/assent to STI screening, a questionnaire or both
  - provide a urine sample to be screened for gonorrhea and chlamydia.
  - Complete a questionnaire
- The IRB waived the need for both parental consent and written consent/assent from the patient.

Methods:

- Confidential telephone number is obtained
- Positive results:
  - Notified and a prescription called in to a pharmacy
  - Gonorrhea - instructed to return for ceftriaxone injection
  - Pharmacy is later contacted to document treatment.

Methods:

- Patients not participating in STI screening are asked to complete a questionnaire
  - consent/assent is obtained
  - Questionnaire is completed on a laptop
  - Qualtrics™ online survey software
  - Patients who decline STI screening have a slightly different survey than those who agreed.

Why not ask about sexual activity?

- We hope to reach patients that would not be honest about sexual history
  - Inaccurate self-reported sexual history\textsuperscript{13}
    - 10\% with positive STI test reported abstaining from sexual intercourse in the preceding 12 months
    - 6\% reported no history of sexual activity ever

Why not ask about sexual activity?

- Physicians can be inconsistent in taking a sexual history:
  - 82\% of patients presenting to a PED with an STI-related complaint had a sexual history documented\textsuperscript{14}
  - White adolescent females with chief complaints concerning for STIs have sexual histories documented less frequently than black adolescent females\textsuperscript{15}
Questionnaire:

- Sexual history
- Barriers to accepting screening?
  - Parental presence?
  - Concern about privacy/confidentiality?
  - Concern about negative reactions to a positive test result?
  - Time/Inconvenience?
  - Do not feel they need it?
    - Not sexually active
    - Recently tested elsewhere

This survey was pilot tested on several adolescents in the emergency department to assess for clarity, ease of reading, etc.

Results:

- **Screened**: 179
- **Declined**: 42
- **Enrolled**: 146
  - Total Urine samples: 102
  - Total Surveys: 116
- **Total Males/Females Enrolled**:
  - Males: 59
  - Females: 78

Results:

- Positive tests:
  - Gonorrhea: 1 (1.2%)
  - Chlamydia: 6 (7.1%)
Results:

- **Case 1:**
  - 19yo African American female with chief complaint: armpit abscess
  - Screening positive for gonorrhea and chlamydia
  - Patient was contacted and instructed to contact Teen Clinic for ceftriaxone injection
  - Patient urine hcg positive

Results:

- **Case 2:**
  - 16yo Caucasian female with chief complaint: headache.
  - Patient agreed to participate in urine sample (not survey).
  - Wanted to provide sample without parents knowing.

Results:

- **Questionnaire**
  - Survey says Americans getting tired of surveys

Results:

- **Refused Test:** What if you did agree to get tested today? As far as you know, how possible is it that you would test positive for other genitourinary or internal infections?
<table>
<thead>
<tr>
<th>Response to STI screening request</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreed</td>
<td>52</td>
<td>38</td>
<td>90</td>
</tr>
<tr>
<td>Gave no opinion</td>
<td>18</td>
<td>19</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>42</td>
<td>109</td>
</tr>
</tbody>
</table>

Results:

- **Agreed to Test:** As far as you know, how possible is it that you will test positive for other genitourinary or internal infections?
<table>
<thead>
<tr>
<th>Answer</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all possible</td>
<td>29</td>
<td>29</td>
<td>58</td>
</tr>
<tr>
<td>Only slightly possible</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Somewhat possible</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Very possible</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Extremely possible</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>10</td>
<td>44</td>
</tr>
</tbody>
</table>

- **Refused Test:** What if you did agree to get tested today? As far as you know, how possible is it that you would test positive for other genitourinary or internal infections?
<table>
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<td>19</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>42</td>
<td>109</td>
</tr>
</tbody>
</table>
Results:

Did the presence of people in the room, other than your doctor, affect your decision to not get tested today?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Bar</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, not at all</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Yes, somewhat</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Yes, very much</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Unsure</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Yes, completely</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

Summary:

• Screening programs in the PED can be done successfully.
  • Smoking
  • Mental Health
  • HIV
  • Universal STI screening in the future??

Thank you to:

• Jen Reed, MD
• Mike FitzGerald, PhD
• Rhiannon Richman, MPH
• Joy Lippe, MD
• Alison Damon
• Matt Schneider

References:


Thank you! Questions?


Results:

Many people your age engage in sexual behaviors including oral sex, vaginal intercourse, or anal intercourse. We do not judge these behaviors as right or wrong, but it's possible to get goiterosis or chlamydia from any of these. Have you ever engaged in any of the behaviors described above?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Bar</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>132</td>
</tr>
</tbody>
</table>
Results:

Have you ever engaged in intercourse (vaginal or anal)?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Bar</th>
<th>Responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>57</td>
<td>80%</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>7</td>
<td>11%</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Results:

How often - would you say - did you use a condom?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Bar</th>
<th>Responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td></td>
<td>5</td>
<td>8%</td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
<td>6</td>
<td>11%</td>
</tr>
<tr>
<td>Sometime</td>
<td></td>
<td>11</td>
<td>13%</td>
</tr>
<tr>
<td>Usually</td>
<td></td>
<td>18</td>
<td>21%</td>
</tr>
<tr>
<td>Always</td>
<td></td>
<td>19</td>
<td>23%</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Results:

Did your concern about a bad reaction affect your decision to not get tested?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Bar</th>
<th>Responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, not at all</td>
<td></td>
<td>24</td>
<td>83%</td>
</tr>
<tr>
<td>Yes, somewhat</td>
<td></td>
<td>4</td>
<td>16%</td>
</tr>
<tr>
<td>Yes, very much</td>
<td></td>
<td>5</td>
<td>6%</td>
</tr>
<tr>
<td>Unsure</td>
<td></td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Yes, completely</td>
<td></td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Results:

REFUSED TEBT - Did the possibility of having to spend a longer time in the Emergency Department waiting for the test results affect your decision to not get tested today?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Bar</th>
<th>Responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, not at all</td>
<td></td>
<td>23</td>
<td>86%</td>
</tr>
<tr>
<td>Yes, somewhat</td>
<td></td>
<td>6</td>
<td>24%</td>
</tr>
<tr>
<td>Yes, very much</td>
<td></td>
<td>4</td>
<td>16%</td>
</tr>
<tr>
<td>Unsure</td>
<td></td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Yes, completely</td>
<td></td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Results:

REFUSED TEBT - Did your upset feelings affect your decision to not get tested today?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Bar</th>
<th>Responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, not at all</td>
<td></td>
<td>17</td>
<td>71%</td>
</tr>
<tr>
<td>Yes, somewhat</td>
<td></td>
<td>4</td>
<td>17%</td>
</tr>
<tr>
<td>Yes, very much</td>
<td></td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Unsure</td>
<td></td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Yes, completely</td>
<td></td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>