Sexual Transmission of HCV Among Injection Drug Users and their Non-Injecting Sex Partners in the U.S.-Mexico Border Region

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OVERVIEW OF PRESENTATION
✓ Background & Significance
✓ Goals & Objectives
✓ Methods & Materials
✓ Results
✓ Conclusions

BACKGROUND & SIGNIFICANCE: PASO DEL NORTE REGION
✓ Mid-point of 2,000 mile border
✓ Legal divide of two countries (Ramos, 2009)
✓ Population who live on both sides of border
✓ Ideal for drug trafficking (Campbell, 2009)
✓ High Intensity Drug Trafficking Area (HDTA) (ONDCP, 2011)
**BACKGROUND & SIGNIFICANCE:**

**POPULATION OF EL PASO-JUÁREZ REGION**

- Estimated 2-million people in Paso del Norte
  - 1.3 million living in Cd. Juárez (INEGI, 2012)
- Historical events that influenced migration to region:
  - 1942: Bracero program (Ruiz, 1998; Lovey, 1999)
  - 1965: Border Industrialization Program (BIP) (Ruiz, 1998)
- High cross-border mobility and transient nature (Campbell, 2009; RTA, 2012; Ojeda, 2012)
- Population with no social ties or network (Ruiz, 1998)

**BACKGROUND & SIGNIFICANCE**

**IDU AND PARTNERS**

- Past decade drug use recognizable problem: (Bucardo, 2008)
  - Depressed economy
  - Increased border security
  - Low heroin price and high purity
- Cd. Juárez ranks 2nd in drug consumption (CONAPO, 1998)
  - 6,000 injection drug users (IDU) (Gaviria, 2003)
  - 186 *picaderos* (shooting galleries) (Gaviria, 2003)
  - 75 *picaderos* 2011 (Ramos ME, 2011)

**BACKGROUND & SIGNIFICANCE:**

**EPIDEMIOLOGY OF HIV**

<table>
<thead>
<tr>
<th></th>
<th>Global</th>
<th>United States</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximate Population Infected (millions)</td>
<td>34 (WNV, 2011)</td>
<td>1.2** (CDC, 2011)</td>
<td>0.22 (NID, 2009)</td>
</tr>
<tr>
<td>Estimated % Population Infected</td>
<td>0.8%* (WNV, 2011)</td>
<td>&gt;1.0% (Berling, 2010)</td>
<td>0.3% (NID, 2009)</td>
</tr>
</tbody>
</table>

*Among adults
**Among ≥13 years old
**Background & Significance:**

<table>
<thead>
<tr>
<th></th>
<th>Global</th>
<th>United States</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximate Population Infected (millions)</td>
<td>130</td>
<td>3.2</td>
<td>2.2</td>
</tr>
<tr>
<td>(MID, 2002)</td>
<td>(Dannen, 2007)</td>
<td>(Mendez-Sanchez, 2018)</td>
<td></td>
</tr>
<tr>
<td>Estimated % Population Infected</td>
<td>3%</td>
<td>1.8%</td>
<td>1-2.5%</td>
</tr>
</tbody>
</table>

**Overall Prevalence by Disease Among IDUs in Paso del Norte, 2008**

<table>
<thead>
<tr>
<th>Disease</th>
<th>HAV</th>
<th>HBV</th>
<th>HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paso</td>
<td>69.5%</td>
<td>69.4%</td>
<td>88.1%</td>
</tr>
</tbody>
</table>

Adapted from (Beumtech, 2008)

**SeroPrevalence of Disease by City Among IDUs, 2008**

<table>
<thead>
<tr>
<th>City</th>
<th>HAV</th>
<th>HBV</th>
<th>HCV</th>
<th>HIV</th>
<th>Syphilis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dona Ana County, NM</td>
<td>68</td>
<td>58</td>
<td>80</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Juarez, MX</td>
<td>64.2</td>
<td>95.6</td>
<td>3.8</td>
<td>3.8</td>
<td>6.8</td>
</tr>
<tr>
<td>El Paso, TX</td>
<td>79.9</td>
<td>84.8</td>
<td>83</td>
<td>8.8</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Adapted from (Beumtech, 2008)

**Aims**

- Estimate prevalence of:
  - HCV and HIV serostatus
  - Injection drug use risk behaviors associated with HCV reactivity
  - Sexual risk behaviors associated with HCV reactivity

- To estimate the prevalence of and discordance between IDUs and their non-injecting sex partners for:
  - Drug use
  - Sexual risk behaviors
  - Other HCV risk behaviors
  - HIV and HCV serostatus
HYPOTHESIS

- There is discordance in the following for IDUs and their non-injecting sex partners:
  + sex under the influence (e.g., alcohol or drug use before or during sex)
  + transactional sex
  + ever having sexually transmitted infection (STI)
  + unprotected vaginal or anal sex
  + traumatic anal sex
  + concurrent sexual partners
  + other risk behaviors (e.g., jail, tattoos, piercings, blood transfusions)

METHODS & MATERIALS: STUDY DESIGN AND RECRUITMENT

- Study Design:
  + Cross-sectional, pilot study
- Sampling:
  + Convenience and snowball sampling
- Recruitment:
  + Ongoing HIV street outreach programs
- Sample Size:
  + 50 IDUs with their non-injecting sex partner (n=50 couples)

METHODS & MATERIALS: STUDY PARTICIPANTS

- Eligibility criteria for all participants:
  + 18 years or older
  + At least two months ago have had vaginal, oral, or anal sex with each other
  + Able to provide informed consent
  + Self-report refrain from drugs and alcohol at least one hour prior to signing consent form
- IDU specific: Injection drug use in the last 30 days
- Sex partner specific: never injected drugs in their lifetime

METHODS & MATERIALS: ELIGIBILITY CRITERIA

<table>
<thead>
<tr>
<th>Hace 2 meses</th>
<th>Hace 30 días</th>
<th>Hoy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pareja Sexual: ha tenido relaciones sexuales con el UDI hace dos meses para atrás</td>
<td>UDI: ha inyectado drogas en los últimos 30 días</td>
<td></td>
</tr>
</tbody>
</table>
**METHODS & MATERIALS:**

**MEASURES**

- Risk Behavior Assessment (RBA) tool measures risk behaviors for HIV (NIDA, 1993; Heimer, 2007)
- Socio-Demographic Characteristics
- Drug Using Behaviors
- Sexual Risk Behaviors
- Other risk behaviors
- Serostatus for HCV and HIV

**METHODS & MATERIALS:**

**TESTS**

- Rapid fingerpick test
- OraQuick® for HCV
- ADVANCE® for HIV
- 20 minutes
**METHODS & MATERIALS: HARM REDUCTION MATERIAL**

- **Univariate statistics** for all variables by partner type
- **Bivariate associations** were tested with Chi-Square Test and Fisher Exact Test
- **Discordance** was assessed with McNemar Test
- Statistical significance at p-value < 0.05 for all tests
- **Multivariate Analysis:** pending