High Prevalence of STI’s in West Texas

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Disclosure Statement

• Speaker: Cristina Penon

• Dr. Penon has documented that she has nothing to disclose.
Gonorrhea and Chlamydia

- Pelvic Inflammatory Disease
  - Internal abscesses and chronic abdominal pain
  - Infertility
  - Ectopic Pregnancy

- Epididymitis
  - Infertility

- Disseminated Gonococcal Infection
  - Arthritis, tenosynovitis, dermatitis
  - Life threatening

- Neonatal Infections

- Facilitate HIV transmission
Annual Costs

- United States- $16 billion
- Chlamydia- $516.7 million
- Gonorrhea- $162.1 million

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Females</th>
<th>Males</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct medical costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cost per case of PID [23–25]</td>
<td>$1,995</td>
<td>not applicable</td>
<td>± 50%</td>
</tr>
<tr>
<td>Average cost per case of epididymitis [26]</td>
<td>not applicable</td>
<td>$274</td>
<td>± 50%</td>
</tr>
<tr>
<td>Average sequelae costs per case of syphilis [5]</td>
<td>$572*</td>
<td>$572*</td>
<td>± 50%</td>
</tr>
<tr>
<td>Average cost per case of chlamydia [5]</td>
<td>$315</td>
<td>$26</td>
<td>± 50%</td>
</tr>
<tr>
<td>Average cost per case of gonorrhea [5]</td>
<td>$343</td>
<td>$68</td>
<td>± 50%</td>
</tr>
<tr>
<td>Average cost per case of syphilis [5]</td>
<td>$572*</td>
<td>$572*</td>
<td>± 50%</td>
</tr>
<tr>
<td>Average cost per case of HIV [6]</td>
<td>$198,471</td>
<td>$198,471</td>
<td>± 50%</td>
</tr>
<tr>
<td>Average cost per case of congenital syphilis [1,64,65]</td>
<td>$6,738</td>
<td>$6,738</td>
<td>± 50%</td>
</tr>
</tbody>
</table>
West Texas-Ector County


https://censusreporter.org/profiles/05000US48135-ector-county-tx/
West Texas-Ector County

**Most common industries in 2016 (%):**
- Mining, quarrying, and oil and gas extraction (22%)
- Construction (16%)
- Retail trade (13%)
- Transportation and warehousing (10%)
- Manufacturing (8%)
- Other services, except public administration (6%)
- Accommodation and food services (6%)

**Most common occupations in 2016 (%):**
- Sales and related occupations (21%)
- Office and administrative support occupations (17%)
- Food preparation and serving related occupations (10%)
- Education, training, and library occupations (10%)
- Management occupations (9%)
- Personal care and service occupations (6%)
- Community and social service occupations (4%)
Objective

To identify the age groups with the highest rates of chlamydia or gonorrhea and to compare them to those of the state and the country.
Hypothesis

We hypothesize Ector County will have higher rates of STI’s compared to state and national rates. We also expect the age group with the most reported infections to be under the age of 35.
Methods

- Five-year cross-sectional study (2012-2016)
- Texas DSHS, CDC STD Data and Statistics
- Reported gonorrhea or chlamydia
- Data reported includes age, gender, race, and ethnicity
- STI rates compared between Ector County, Texas, and USA
- Chi-square
- $p < 0.05$ statistically significant
RESULTS
Chlamydia Rates per 100,000
2012-2016

Ector County  Texas  USA

* p < 0.05
Chlamydia Rates per 100,000
2012-2016

Ector County, Texas, USA

Population

Chlamydia Rates per 100,000
2012-2016

Ector County, Texas, USA

Population
Gonorrhea Rates per 100,000
2012-2016

* p < 0.05

<table>
<thead>
<tr>
<th>Year</th>
<th>Ector County</th>
<th>Texas</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>191</td>
<td>125</td>
<td>107</td>
</tr>
<tr>
<td>2013</td>
<td>218</td>
<td>128</td>
<td>105</td>
</tr>
<tr>
<td>2014</td>
<td>253</td>
<td>131</td>
<td>110</td>
</tr>
<tr>
<td>2015</td>
<td>235</td>
<td>145</td>
<td>123</td>
</tr>
<tr>
<td>2016</td>
<td>183</td>
<td>155</td>
<td>146</td>
</tr>
</tbody>
</table>
Reported Cases By Age (2012-2016)-Ector County

<table>
<thead>
<tr>
<th>Age</th>
<th>Chlamydia</th>
<th>Gonorrhea</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>33</td>
<td>8</td>
</tr>
<tr>
<td>15-24</td>
<td>3214</td>
<td>804</td>
</tr>
<tr>
<td>25-34</td>
<td>1310</td>
<td>581</td>
</tr>
<tr>
<td>35-44</td>
<td>249</td>
<td>131</td>
</tr>
<tr>
<td>45+</td>
<td>76</td>
<td>47</td>
</tr>
</tbody>
</table>
Gonorrhea Incidence By Age
Ector County

- 0-14
- 15-24
- 25-34
- 35-44
- 45+
Chlamydia Rates per 100,000 Ages 15-24

Ector County, Texas, USA

<table>
<thead>
<tr>
<th>Year</th>
<th>Ector County</th>
<th>Texas</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>410</td>
<td>337</td>
<td>314</td>
</tr>
<tr>
<td>2013</td>
<td>472</td>
<td>331</td>
<td>300</td>
</tr>
<tr>
<td>2014</td>
<td>482</td>
<td>318</td>
<td>298</td>
</tr>
<tr>
<td>2015</td>
<td>465</td>
<td>330</td>
<td>306</td>
</tr>
<tr>
<td>2016</td>
<td>381</td>
<td>326</td>
<td>312</td>
</tr>
</tbody>
</table>

* p < 0.05
Gonorrhea Rates per 100,000
Ages 15-24

* p < 0.05

Ector County | Texas | USA

2012: 109, 78, 63
2013: 119, 77, 59
2014: 117, 74, 58
2015: 115, 78, 61
2016: 94, 79, 68
Ector County Chlamydia Incidence by Gender

<table>
<thead>
<tr>
<th>Year</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>181</td>
<td>615</td>
</tr>
<tr>
<td>2013</td>
<td>218</td>
<td>818</td>
</tr>
<tr>
<td>2014</td>
<td>254</td>
<td>815</td>
</tr>
<tr>
<td>2015</td>
<td>247</td>
<td>819</td>
</tr>
<tr>
<td>2016</td>
<td>213</td>
<td>704</td>
</tr>
</tbody>
</table>

* p < 0.05
Ector County Gonorrhea Incidence by Gender

<table>
<thead>
<tr>
<th>Year</th>
<th>Males</th>
<th>Females</th>
</tr>
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<tbody>
<tr>
<td>2012</td>
<td>143</td>
<td>121</td>
</tr>
<tr>
<td>2013</td>
<td>148</td>
<td>161</td>
</tr>
<tr>
<td>2014</td>
<td>201</td>
<td>165</td>
</tr>
<tr>
<td>2015</td>
<td>190</td>
<td>162</td>
</tr>
<tr>
<td>2016</td>
<td>154</td>
<td>126</td>
</tr>
</tbody>
</table>
Ector County STI Percentage by Race 2012-2016

CHLAMYDIA
- White: 67%
- Black: 8%
- Hispanic: 22%
- Other: 3%
- Unknown: 3%

GONORRHEA
- White: 54%
- Black: 14%
- Hispanic: 29%
- Other: 2%
- Unknown: 2%

Legend:
- White
- Black
- Hispanic
- Other
- Unknown
Conclusions

• The rates of STI’s in Ector County are higher than the state of Texas and the USA.

• The age range with the highest rates of STI’s in West Texas is 15-24.

• Rates continued to increase with the growing population from 2012-2015, however decreased in 2016.

• Females have significantly higher rates of chlamydia than males.

• Incidence of STI’s in Ector County is highest in Hispanics.
Limitations to the Study

- Unknown amount of cases that are not reported
- The data is reported data
Future Scope of Practice

• Utilize primary and secondary prevention practices to reduce the rates of reported STI cases in Ector County by 75% for the age group of 15-24 by 2020

• Prospective interventional study that will utilize education, screening, and treatment of STI’s

• ECISD, institutions of higher education, Ector County Health Department, community outreach
References


• http://www.city-data.com/city/Odessa-Texas.html

• http://www.multpl.com/united-states-population/table

• https://www.dshs.texas.gov

• https://www.cdc.gov/nchhstp/atlas
Acknowledgements

• Research Advisor: Vani Selvan
• TTUHSC Department of Family and Community Medicine-Permian Basin
• Texas Department of Health State Services
• Centers for Disease Control and Prevention