Viral Hepatitis Surveillance Activities at the Philadelphia Department of Public Health (PDPH)

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Hep B United Webinar
October 8th, 2015
Prevention at PDPH

Hepatitis Coordinator at PDPH since 2007

- Emphasis on collaboration to align local efforts with national Action Plan
  - Internal: PCSI, Division of Disease Control Workgroup
  - External: Hep B United, Hep C Allies of Philadelphia (HepCAP)
- Uniting local partners around a common goal:

Philadelphia can be a National leader against viral hepatitis

Operation Storm City Hall
Hepatitis Awareness Month, 2014
The Hepatitis Epidemiology Program (HEP)

- **Nov 2012** – PCSI/Epi awarded the surveillance grant
- **Jan 2013** - Developed HEP documents
  - Patient and provider letters
  - Investigation forms
  - Electronic workflows and reports
  - Protocols
  - Began patient and provider calls and site visits
- **Feb 2013** - Formed the HEP team
  - Created HEP coordinator and epi positions
  - Hired 3 HEP investigators (HEPIs)
  - Joined forces with the VPHC
- **March/April 2013** – Began surveillance
  - Sent a Health Alert about HEP to health care facilities in Philadelphia
  - Sent first batch of letters to eligible patients and providers
  - Began patient and provider calls and site visits
HEP surveillance

* Eligible patients: newly reported acute and chronic HBV and HCV (confirmed and probable)

Electronic Hepatitis Registry

Workflows created with line lists of eligible patients for each investigator

HEP patient and provider letters sent

HEP patient and provider calls made (4 attempts)

Field visits made, if necessary

Demographic, Clinical, Risk Factor Information obtained

Data entered into Registry
HEP Surveillance
Findings: 2013 - 2014
### Newly Reported Viral Hepatitis Cases by Status: Philadelphia, 2013-2014

<table>
<thead>
<tr>
<th>Disease</th>
<th>Status</th>
<th>New Reports</th>
<th>Investigated N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV</td>
<td>Acute</td>
<td>12</td>
<td>12 (100%)</td>
</tr>
<tr>
<td></td>
<td>Chronic</td>
<td>1,872</td>
<td>941 (50%)</td>
</tr>
<tr>
<td>HCV</td>
<td>Acute</td>
<td>42</td>
<td>42 (100%)</td>
</tr>
<tr>
<td></td>
<td>Chronic</td>
<td>6,569</td>
<td>1,750 (27%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>8,495</td>
<td>2,745 (32%)</td>
</tr>
</tbody>
</table>
**Completeness of chronic confirmed HBV and HCV Investigations**

- Newly identified hepatitis-infected individuals reported to PDPH each year

<table>
<thead>
<tr>
<th>Fields</th>
<th>Completeness of confirmed chronic hepatitis investigations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
</tr>
<tr>
<td>gender</td>
<td>98%</td>
</tr>
<tr>
<td>age</td>
<td>99%</td>
</tr>
<tr>
<td>race/ethnic</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Clinical</strong></td>
<td></td>
</tr>
<tr>
<td>HIV</td>
<td>1%</td>
</tr>
<tr>
<td>diabetes</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Risk Factor</strong></td>
<td></td>
</tr>
<tr>
<td>IDU</td>
<td>8%</td>
</tr>
<tr>
<td>incarceration</td>
<td>8%</td>
</tr>
<tr>
<td>tattoo</td>
<td>7%</td>
</tr>
<tr>
<td>employed med/dent field</td>
<td>0</td>
</tr>
<tr>
<td>health insurance</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Additional clinical and risk factor variables being investigated:** symptoms, pregnancy status, hospitalizations, treatment, gender/number of sex partners, needle-stick, hemodialysis, blood product/organ transplant, contact with HCV/HBV infected person, counseling for infection, etc.
Investigated hepatitis cases by gender and age group: Philadelphia, 2013-2014

### HBV

<table>
<thead>
<tr>
<th>Age group</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-30</td>
<td>35</td>
<td>94</td>
</tr>
<tr>
<td>1-18</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>0-1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>45-64</td>
<td>22</td>
<td>223</td>
</tr>
<tr>
<td>31-44</td>
<td>52</td>
<td>203</td>
</tr>
<tr>
<td>&gt;=65</td>
<td>120</td>
<td>28</td>
</tr>
</tbody>
</table>

### HCV

<table>
<thead>
<tr>
<th>Age group</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-30</td>
<td>90</td>
<td>89</td>
</tr>
<tr>
<td>1-18</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>0-1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>45-64</td>
<td>252</td>
<td>545</td>
</tr>
<tr>
<td>31-44</td>
<td>85</td>
<td>177</td>
</tr>
</tbody>
</table>
Investigated hepatitis cases by risk factor: Philadelphia, 2013-14

HBV
- Lived Outside US: 67%
- Medical: 12%
- Behavioral: 13%
- Hepatitis Contact: 8%

N=803

HCV
- Lived Outside US: 9%
- Medical: 26%
- Behavioral: 50%
- Hepatitis Contact: 15%

N=1,434

- Medical risk factors ~ blood/organ transplant, dialysis, needlestick, work in a medical/dental field
- Behavioral risk factors ~ injection drug use, history of incarceration, multiple sexual partners, unlicensed tattoos
Investigated hepatitis cases by race and ethnicity: Philadelphia, 2013-2014

- **HBV**
  - Asian/PI: 400 cases
  - Black: 300 cases
  - Hispanic: 200 cases
  - Other: 100 cases
  - Unknown: 50 cases

- **HCV**
  - Black: 700 cases (starred)
  - Hispanic: 300 cases
  - Other: 100 cases
  - Unknown: 50 cases (starred)

- USA - 19%
- SE Asia - 24%
- North & Central Asia - 5%
- China - 32%
- Africa - 9%
- Caribbean & Ctrl America - 7%
- Middle East - 1%
- Europe - 2%
Methods for ‘reaching’ immigrant populations for patient investigation

- **Sending patient letters in appropriate language**
  - Eight languages are currently used (English, Cambodian, Vietnamese, Cantonese, Korean, Indonesian, Russian, and French)

- **Ensuring that language is not a barrier during patient interviews**
  - Using three-way communication from LanguageLine™ Solutions interpreters

- **Adapting interviews for foreign-born patients**
  - If patient is born in an HBV endemic country, interviews are shortened.
How can hepatitis surveillance aid prevention?
By defining ‘new’ populations at-risk for HBV

- **Example:** U.S. born HBV cases for whom sexual contact with an HBV+ individual is the only known risk factor
  - 3% (N = 11) of HBV cases investigated during 2013 – 2014

<table>
<thead>
<tr>
<th></th>
<th>HBV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>45%</td>
</tr>
<tr>
<td><strong>MSM (% of Males)</strong></td>
<td>1 (17%)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>9%</td>
</tr>
<tr>
<td>African American</td>
<td>73%</td>
</tr>
<tr>
<td>Other</td>
<td>18%</td>
</tr>
<tr>
<td><strong>HIV+</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Average Age(range)</strong></td>
<td>46 (17-68)yrs</td>
</tr>
<tr>
<td><strong>&gt;10 Sexual Partners (lifetime)</strong></td>
<td>64%</td>
</tr>
</tbody>
</table>
By using additional data sources to identify perinatal HBV cases

1. Births to Philadelphia Residents

2. Hepatitis B Laboratory/Surveillance Data (HBV data)

3. PHBPP Data
   • Identification of previously identified mothers and HBV cases
Perinatal HBV capture-recapture analysis has identified 20-40 additional mother-infant pairs/year.
By using more automated methods to ‘find’ HBV-positive pregnant mothers

2013

Provider ‘rule out pregnancy’ calls 77%
Capture Recapture 13%
ELR 5%
Vaccine Registry 1%
Patient Investigation 2%
OOJ 2%
n=178

2014

Provider ‘rule out pregnancy’ calls 39%
Capture Recapture 21%
ELR 28%
Vaccine Registry 21%
Patient Investigation 5%
OOJ 1%
n=168
By highlighting zip codes/census tracts that show changes in the number of newly reported HBV cases.

2013 to 2014

Rate Difference (x100,000)

- Fairmount Park
- Hydrology
- -75 to -51
- -50 to -1
- 0
- 1 to 50

↑ Immigrants from HBV endemic countries?
By identifying patients who are interested in receiving hepatitis education materials and local resources.
By identifying hepatitis C patients who lack insurance and referring them to the Health Department for hepatitis B vaccination

- 76 individuals have been successfully contacted and received vaccination since August 2013.
- Has provided an opportunity to get additional resources to patients.
Ongoing HBV-Related Activities

- **HBV Disease Outcomes**
  - Matching HBV surveillance data to cancer and death registry data to assess 1) racial disparities in outcomes and 2) rates of non-liver cancer diagnoses

- **Acute HBV Contact Tracing**
  - Identifying and offering HBIG and/or HBV vaccine to contacts of acute HBV cases

- **HBV Testing Rates**
  - Analyzing negative HBV test results (HBsAg and DNA) to assess differences in HBV testing and positivity rates by patient demographics, patient address, and ordering facility type

- **HBV Waning Immunity**
  - Matching HBV surveillance data to Immunization record data to assess burden of disease among vaccinated individuals
Using Philadelphia’s viral hepatitis surveillance data in your organization

**How is it available?**
- Online Reports
  - Health Information Portal
  - Biannual HEP Newsletter
- Data Requests
  - Demographic and risk factor breakdowns
  - Maps
  - Bullet points for policy briefs

**How can it be used?**
- To influence policy change (ie. city council, medical providers)
- To better understand hard to reach populations
Contact Information

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