Hepatitis C Surveillance in NYSDOH

- Hepatitis C is laboratory- and provider-reportable
  - Transfer of electronic lab reports creates >97% of cases (<3% manual entry)
  - ~153,000 lab reports during 2017
  - Negative HCV RNA results lab-reportable statewide since 2016

- Home Rule: Local Health Departments have primary responsibility for follow-up
  - LHDs create investigations/cases
  - Tools include Dear Doctor Letter (DDL), phone interview, medical record review, etc.
  - NYSDOH staff review reports for accuracy

- “Baby Boomer” testing law since 2014
Case Classification (2016 → Present)

- **Acute**
  - Must have
    - Discrete onset of clinically compatible symptoms with either jaundice or ALT>200
    - Or documented test conversion (any negative → any positive) within 12 months
    - No previous case
  - **Confirmed**: positive RNA test, or test conversion
  - **Probable**: positive antibody test

- **Chronic**
  - Must not be acute
  - **Confirmed**: positive RNA test
  - **Probable**: positive antibody test and no RNA test
  - **Ab+ and RNA-**: positive antibody test and negative RNA test (within 6 mo)
    - **Specific to NYS**
Data notes

• Case data is dynamic – cases never close
  – Data as of Aug 2, 2018

• Data presented is from NYS excluding NYC

• Data represents newly reported cases, not incidence (new infections) nor prevalence (current infections)

• Cases are Confirmed and Probable unless otherwise noted
Hepatitis C – Demographic Summary
Newly Reported Cases, 2017

- 8280 cases
  - 73.9 / 100,000
- 201 acute cases (2%)
- 8079 chronic cases (98%)
- Males 61% total cases
- 20-29 years of age
  - 147.1 / 100,000
- Baby Boomers: age 52-72
  - 88.6 / 100,000

<table>
<thead>
<tr>
<th>Age Group (years)</th>
<th>Number of Cases</th>
<th>Rate Per 100,000 pop.</th>
<th>Number of Cases</th>
<th>Rate Per 100,000 pop.</th>
<th>Number of Cases</th>
<th>Rate Per 100,000 pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3231</td>
<td>56.7</td>
<td>5039</td>
<td>91.4</td>
<td>8280</td>
<td>73.9</td>
</tr>
<tr>
<td>Acute</td>
<td>96</td>
<td>1.7</td>
<td>105</td>
<td>1.9</td>
<td>201</td>
<td>1.8</td>
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<tr>
<td>Chronic</td>
<td>3135</td>
<td>55.0</td>
<td>4934</td>
<td>89.5</td>
<td>8079</td>
<td>72.1</td>
</tr>
<tr>
<td>0-19</td>
<td>92</td>
<td>7.0</td>
<td>62</td>
<td>4.5</td>
<td>154</td>
<td>5.7</td>
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<tr>
<td>20-29</td>
<td>961</td>
<td>132.0</td>
<td>1245</td>
<td>160.7</td>
<td>2210</td>
<td>147.1</td>
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<tr>
<td>30-39</td>
<td>708</td>
<td>109.2</td>
<td>1110</td>
<td>169.0</td>
<td>1820</td>
<td>139.4</td>
</tr>
<tr>
<td>40-49</td>
<td>343</td>
<td>48.4</td>
<td>635</td>
<td>91.7</td>
<td>979</td>
<td>69.9</td>
</tr>
<tr>
<td>50-59</td>
<td>476</td>
<td>55.4</td>
<td>851</td>
<td>103.2</td>
<td>1328</td>
<td>78.8</td>
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<tr>
<td>60-69</td>
<td>453</td>
<td>64.9</td>
<td>890</td>
<td>137.0</td>
<td>1344</td>
<td>99.7</td>
</tr>
<tr>
<td>70+</td>
<td>195</td>
<td>26.7</td>
<td>241</td>
<td>45.7</td>
<td>437</td>
<td>34.8</td>
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<tr>
<td>Unknown</td>
<td>3</td>
<td>NA</td>
<td>5</td>
<td>NA</td>
<td>8</td>
<td>NA</td>
</tr>
</tbody>
</table>
Acute and Chronic Hepatitis C – Newly Reported Cases, 2012-2017

NYS HCV Testing Law initiated in 2014

Surveillance case definition change in 2016

confirmed cases
probable cases
Acute and Chronic Hepatitis C – Newly Reported Cases by Reporting Status, 2012-2017

Number of Cases

- Confirmed and Probable
- Other: Ab+&RNA-
- Other: Low positive Ab

Year
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
Acute and Chronic Hepatitis C – Newly Reported Cases by Ryan White Region, 2012-2017

State inmates excluded
Acute and Chronic Hepatitis C – Case Rates by County, 2017

Yellow markers: places with the largest populations

State inmates excluded
Age Distribution of Newly Reported Cases, 2017

- **Age 15-35**
- **Baby boomers**
Acute and Chronic Hepatitis C – Median Age at Report, 2012-2017
Race Distribution, 2017

Including Cases with Unknown Race

- Acute: 80 White, 2 Black, 5 Asian/PI, 11 Unknown
- Chronic: 54 White, 8 Black, 5 Asian/PI, 32 Unknown

Excluding Cases with Unknown Race

- Acute: 91 White, 3 Black, 5 Asian/PI
- Chronic: 79 White, 12 Black, 7 Asian/PI
Ethnicity Distribution, 2017

Including Cases with Unknown Ethnicity

- Acute: 6 Hispanic, 70 non-Hispanic, 24 Unknown
- Chronic: 6 Hispanic, 39 non-Hispanic, 55 Unknown

Excluding Cases with Unknown Ethnicity

- Acute: 7 Hispanic, 93 non-Hispanic
- Chronic: 13 Hispanic, 87 non-Hispanic
### Acute Hepatitis C Risk Factors*, Where Reported (Unknowns Removed), 2017

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection drug use</td>
<td>80%</td>
</tr>
<tr>
<td>Other drug use</td>
<td>81%</td>
</tr>
<tr>
<td>Close contact</td>
<td>63%</td>
</tr>
<tr>
<td>Incarceration</td>
<td>48%</td>
</tr>
<tr>
<td>Tattoo/piercing</td>
<td>24%</td>
</tr>
<tr>
<td>STI</td>
<td>20%</td>
</tr>
<tr>
<td>&gt;1 sex partner</td>
<td>58%</td>
</tr>
<tr>
<td>If male, male sex partner</td>
<td>11%</td>
</tr>
<tr>
<td>If male, homo- or bisexual</td>
<td>9%</td>
</tr>
<tr>
<td>Hemodialysis</td>
<td>0%</td>
</tr>
<tr>
<td>Worked in medical/public safety field</td>
<td>8%</td>
</tr>
<tr>
<td>Diabetic</td>
<td>7%</td>
</tr>
</tbody>
</table>

Proportion unknown: 16-67% (median 44.5%)

* During the previous 6 months
### Chronic Hepatitis C Risk Factors*, Where Reported (Unknowns Removed), 2017

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection drug use</td>
<td>72%</td>
</tr>
<tr>
<td>Other drug use</td>
<td>70%</td>
</tr>
<tr>
<td>Close contact</td>
<td>61%</td>
</tr>
<tr>
<td>Incarceration</td>
<td>64%</td>
</tr>
<tr>
<td>STI</td>
<td>28%</td>
</tr>
<tr>
<td>If male, male sex partner</td>
<td>4%</td>
</tr>
<tr>
<td>Hemodialysis</td>
<td>1%</td>
</tr>
<tr>
<td>Worked in medical field</td>
<td>5%</td>
</tr>
<tr>
<td>Blood product before 1992</td>
<td>6%</td>
</tr>
<tr>
<td>Diabetic</td>
<td>9%</td>
</tr>
</tbody>
</table>

Proportion unknown: 60-82% (median 68.5%)

* During the patient's lifetime
Acute and Chronic Hepatitis C – Injection Drug Use by Birth Year, 2017
Summary

• Difficult to discern recent trends of newly reported cases
  – 2014 testing law
  – 2016 case definition change
  – However, median age declining
    • Decreases among baby boomers
      (more robust screening? Fewer baby boomers?)
    • Increases among young adults, IDU
• Predominately young, male, white, non-Hispanic
• Large amount of missing data for race, ethnicity, and risk factors
• Most commonly reported risk factors are IDU, non-IDU, close contact, incarceration, multiple sex partners (acute)
Surveillance Improvements

• Hepatitis C prevalence estimate
  – SUNY Albany School of Public Health
• Enhance CDESS to better meet surveillance needs
  – Better tracking of patients longitudinally
  – Better deduplication of patients
  – More automation to reduce LHD work burden
  – More useful for tracking DOCCS inmates
• Expand gathering of clinical and risk details through medical records review
• Spatial analysis for hepatitis clusters
• Local Health Department training and feedback