Hepatitis C
Across the care continuum addressing stigma
NASTAD TA meeting 2018

Connecticut Department of Public Health
TB, STD, HIV and Hepatitis Section
Hepatitis Program
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Chronic hepatitis C: a case with a positive anti-HCV result with a signal to cut-off predictive of a true positive as determined for the particular assay or confirmed with a more specific test (e.g. RIBA, PCR, genotype).

Some people included in the chronic data may have a positive antibody test but no longer carry the virus due to a resolved infection and/or treatment (approximately 15%).

Number of chronic cases: 1894. Number of cases geocoded: 1812. Range of geocoded rate per town or district: 5 - 148. Town of residence at first report. Rate per 100,000 people based on 2009 census estimates.

State of Connecticut Department of Public Health Viral Hepatitis Program
Hepatitis C root cause analysis addressing a Hepatitis C integrated point of care testing model, Hartford Health and Human Services Health Department and DPH Public Health Quality Improvement Learning Collaborative (PHQILC), 2013
Hepatitis C testing outcome work flow for a Hepatitis C integrated point-of-care testing model, Hartford Health and Human Services Health Department and DPH Public Health Quality Improvement Learning Collaborative (PHQILC), 2013
HCV Outreach Standard Operating Procedure

Receive blood work from lab → Enter into database
- PCR results?
  - Positive
    - Document results
  - Negative
    - No results reported → Call lab
      - PCR results?
        - Positive
          - Document results
        - Negative
          - No PCR ordered → Document results
- No PCR ordered → PCR test
  - Negative
    - Document results
  - Positive
    - Document results
- Was most recent bloodwork ordered by ID, GI or VA?
  - Yes
    - Contact PCP
      - Did PCP refer to a specialist?
        - Yes
          - Offer resources/asistance in linking to care
          - Did patient accept?
            - Yes → Patient linked to care or case otherwise resolved
            - No → Patient lost to care
        - No
          - Is patient aware of diagnosis?
            - Yes
              - Document results
            - No → Patient lost to care
          - Is PCP treating the patient?
            - Yes
              - Document results
            - No → Patient lost to care
  - No → Contact PCP
Connecticut Hepatitis C chronic prevalence estimates - derived from a CT methodology adapted from NHANES III, NVHR and the literature - adjusting for baby boomer prevalence and the inclusion of high risk populations that were excluded, 2013.
Number of Hepatitis C Newly Identified Confirmed and Probable Cases and Known Deaths, Connecticut, 1994-2014*

Source: DPH Hepatitis C Surveillance Registry
In 2012, a t test revealed a statistically reliable difference between the mean number of people in Connecticut that report heroin as one of the top three reasons for entering inpatient treatment ($M=0.34$, $sd=0.473$) and the national mean, $t (61991)=72.137$, $p < 0.05$, $\alpha = 0.05$. This trend and finding was consistent for years 2006-2012.
Hepatitis C past and present confirmed and suspect de-duplicated chronic case counts identified in CTEDSS by county and birth cohorts, Connecticut, 1994 -1996, 1998-2014

<table>
<thead>
<tr>
<th>County</th>
<th>US Census, 2010 Connecticutt</th>
<th>Total (N=3,574,097)</th>
<th>Youngest &gt;2002</th>
<th>Total (N=)</th>
<th>No.</th>
<th>No.</th>
<th>%</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairfield</td>
<td>916,829</td>
<td>37</td>
<td>607</td>
<td>1,652</td>
<td>6,314</td>
<td>1,138</td>
<td>9,777 (16.1)</td>
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<td></td>
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<tr>
<td>Hartford</td>
<td>894,017</td>
<td>47</td>
<td>1,059</td>
<td>2,794</td>
<td>8,603</td>
<td>1290</td>
<td>13,970 (23.0)</td>
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<td></td>
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<tr>
<td>Litchfield</td>
<td>189,927</td>
<td>17</td>
<td>273</td>
<td>385</td>
<td>1,450</td>
<td>157</td>
<td>2,286 (3.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middlesex</td>
<td>165,676</td>
<td>5</td>
<td>218</td>
<td>296</td>
<td>1,240</td>
<td>149</td>
<td>1,910 (3.1)</td>
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<tr>
<td>New Haven</td>
<td>862,474</td>
<td>59</td>
<td>1,059</td>
<td>2,541</td>
<td>9,532</td>
<td>1,236</td>
<td>14,444 (23.8)</td>
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<tr>
<td>New London</td>
<td>274,055</td>
<td>17</td>
<td>467</td>
<td>762</td>
<td>2,708</td>
<td>302</td>
<td>4,259 (7.0)</td>
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</tr>
<tr>
<td>Tolland</td>
<td>152,691</td>
<td>3</td>
<td>119</td>
<td>199</td>
<td>849</td>
<td>73</td>
<td>1,244 (2.0)</td>
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<td></td>
</tr>
<tr>
<td>Windham</td>
<td>118,428</td>
<td>9</td>
<td>268</td>
<td>525</td>
<td>1,186</td>
<td>82</td>
<td>2,071 (3.4)</td>
<td></td>
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</tr>
<tr>
<td>Unknown</td>
<td>No county</td>
<td>9</td>
<td>84</td>
<td>1,083</td>
<td>3,437</td>
<td>298</td>
<td>4,956 (8.2)</td>
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<td></td>
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<tr>
<td>Totals</td>
<td>204</td>
<td>4,819</td>
<td>12,533</td>
<td>38,291</td>
<td>82</td>
<td>6,809 (100)</td>
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</tr>
</tbody>
</table>

Abbreviations: HCV=Hepatitis C virus; US=United States of America; No. = number population count; % = percentage; CTEDSS: CT Electronic Disease Surveillance System is a secure web-based disease surveillance and case management tool that the Connecticut Department of Public Health customized and adopted from Massachusetts’s MAVEN. CTEDSS supports activities relevant to notifiable significant findings and infectious diseases. Hepatitis C cases are de-identified and mutually exclusive.

* expected - synthetic estimates based on NHANES III; Hepatitis C 3.5 percent of the baby boomer population count (US Census, 2010);
** Chronic - Council of State and Territorial Epidemiologist (CSTE) Hepatitis C case definition for past or present chronic hepatitis C – chronologically updated in dataset
Sources: US Census, 2010; Connecticut Department of Public Health Hepatitis Surveillance Data, MAVERN; cases are de-identified and mutually exclusive
CT Hepatitis C surveillance: chronic past or present prevalence trends of newly identified cases by birth cohorts, 1994-1996, 1998-2014

Data Source: CT DPH, CTEDSS surveillance data; cumulative to Dec 31, 2014, includes cases reported in 1997 even though not reportable.

Data Source: CT DPH, CTEDSS surveillance data; cumulative to Dec 31, 2014, includes cases reported in 1997 even though not reportable
CT Hepatitis C surveillance: newly identified chronic Hepatitis C chronic cases, comparing birth cohorts within counties by prevalence counts and population adjusted prevalence rates, CTEDSS, 2016

CT 2016 Hepatitis C surveillance data: N=1,390 newly identified chronic hepatitis C cases; CT newly identified cases, 2016: 45.6/100,000, reflects the implementation of the CSTE 2016 chronic Hepatitis C prevalence case definition; US Census Data, 2010
Linkages to Care and Treatment

Community Assets/Directory of Care
384 patients/HCV provider

Hepatitis C Care Cascade for CT Medicaid Patients, 2015

Gastroenterology and Infectious Disease Specialists Who Treat Hepatitis C

Legend
- Liver Transplant Centers
- GI and ID Specialists

Chronic Hepatitis C Cases (1994-2013)
- 0
- 0 - 1,000
- 1,000 - 1,999
- 2,000 - 4,999
- 5,000 - 6,999
- 7,000 - 7,999
- 8,000 - 9,999
- 10,000 - 11,999
- 12,000 - 13,999
- 14,000 - 15,999
- 16,000 - 17,999
- 18,000 - 19,999
- 20,000 - 21,999
- 22,000 - 23,999
- 24,000 - 25,999
- 26,000 - 27,999
- 28,000 - 29,999
- 30,000 - 31,999
- 32,000 - 33,999
- 34,000 - 35,999
- 36,000 - 37,999
- 38,000 - 39,999
- 40,000 - 41,999
- 42,000 - 43,999
- 44,000 - 45,999
- 46,000 - 47,999
- 48,000 - 49,999
- 50,000 - 50,999

- HCV Antibody Pos2
- HCV PCR Pos
- Geotype Test
- treated

47,195
7,419
3,073
2,052
Hepatitis C testing pilot program, Department of Corrections, Connecticut, September 2015 to February 2016; N=600 offenders tested

Program Flow Chart

Planning Committee
- Warden & Deputies
- DOC Medical Director
- CMHC Medical Director
- CMHC Health Service Site Administrator
- FQHC Medical Director
- FQHC ID Director
- DOC Health Services Program Director
- DOC Program Coordinator/Counselor Sup
- DPH Hepatitis Coordinator

Program Development/Steps
- Develop Aim Statement and indicators Collaboratively
- Identify and leverage resources (e.g., Staff, supplies)
- Establish roles and tasks with timeline
- Develop and execute a MOA (DOC with FQHC)
- Identify training needs and conduct trainings
- Identify reportable findings
- Establish testing mechanisms and protocols (Antibody and PCR testing – includes staffing, supplies, C&T)
- Establish linkage to care mechanisms
- Develop tools, tracking mechanisms & data plan
- Implement and Evaluate

Implementation Steps
- M-F daily offender orientation and HCV ed program Weekly HCV consent, ROI; completion of assessments & testing
- Posttest counseling for all (if Neg no further action)
- Offenders w/ HCV positive antibody results get PCR
- PCR Pos offenders monitored closely by DOC Prgm Coordinator
- Personal attention and face-to-face transfer of referrals to FQHC
- Communication & follow-up between FQHC, DOC, DPH & CMHC
- Data management and reporting tracked and close communication with DOC, FQHC, CMHC to ensure accuracy – DOC Program Coordinator and FQHC personal contact with offenders.

N=600 Opted in for HCV testing

- HCV Antibody Neg, N=511
- PCR Neg =135
- Bonded out N=1
- PCR pos N=1 (without an Antibody Test)
- PCR Pos N=74
- Interferon, N=27
- DOT, N=4
- N=0
- N=3
- N=0
- N=0

Link to Care
- Treatment

- Interferon
- DOT
- N=4
- N=0
- N=3
- N=0
- N=0
Hepatitis C chronic case rates, 2016

Overdose related death rates, 2016

Connecticut Department of Public Health
Hepatitis Program

1,679
1,429
747
2016 SSP Clients
new clients, existing clients, unknown (unkn)
Hepatitis C and overdose-related mortality preliminary data,
January 19, 2017 to October 31, 2017

Hep C testing in OD deaths, 2017
*	extit{early preliminary data}*

- People with Hep C specimen: 263
- Lab analysis: 253
- HCV Ab Pos: 75
- HCV Ab Pos tested for RNA: 36
- RNA Pos: 21 (61%)
- RNA Pending: 18

29.6%
Opioid overdose deaths

Hepatitis C, Opioids, HIV Syndemic
Overlapping Epidemics

PWID: 50-90% HCV positive

HCV

HCV/Opioid Overdose

HIV/HCV Coinfection

HIV

HCV/Opioid Overdose deaths

PWID in the US = 6,612,488 (2.6%)
Drug overdose deaths in the US = 52,404 (2015);
Hepatitis C in the US = 3-5.5 million
People living with HIV in the US = 952,604 (2015)
Stratford Health Department Hepatitis C care cascade for follow-up of 2016 reports conducted by public health nurse; follow-up status as of 9/5/2017

Hepatitis C laboratory biomarkers were reported to Stratford Health Department for 131 unique de-identified Stratford residents. The public health nurse conducted follow-up and documented that of the 132 people with a positive Hepatitis C Antibody test result. As of 9/5/2017: Of the 74 with Hep C PCR positive results: 49 were successfully linked to care. Hepatitis C treatment was confirmed for 14. DPH surveillance: 12 newly identified chronic Stratford 2016 cases were documented in CTEDSS registry.
Survey participants responses to question regarding a felt sense of stigma related to HCV positive status.

N= 281. The majority were SILENT.

Silence is an indicator of internal stigma.