HCV Prevention and Challenges for PWID in Urban Areas

Alain H. Litwin, MD, MPH
Professor of Medicine

CDC, Hepatitis Elimination Summit
Atlanta, Georgia
April 27, 2017
Overview

• Epidemiology of HCV in New York City
• Harm reduction interventions in NYC
  – Needle-syringe programs
  – Opiate agonist treatment programs
  – Remaining challenges
• Models of HCV care for PWID in NYC and beyond
  – Remaining challenges
Newly Reported Persons with Hepatitis C by Zip Code, 2014-2015

Average Annual Rate Per 100,000 People
- 18.2 - 46.9
- 47.0 - 60.6
- 60.7 - 77.0
- 77.1 - 96.2
- 96.3 - 339.4
- 964.3 (Rikers Island 1)
- Non-Residential Areas

NYC Health
Newly Reported Persons with Hepatitis C by Age

2005

2015
Hepatitis C Rates by United Hospital Fund Neighborhood, 2011-2015
Care Cascade for Prevalent Infections

- Total
- Aware of infection: 60
- Confirmed infection: 53
- Received treatment: 22%
- Cured: 14%
Summary: Epidemiology of Hepatitis C in NYC

- Baby boomers still account for close to 50% of newly reported cases in NYC
- Increasing rates among youth (0-29) though numbers much smaller
- In all age groups, rates higher among men
  - Higher proportion in youth (0-29) are women compared with older ages
- Rates highest in high poverty neighborhoods
- In 2015, 7,328 newly reported persons
- Preliminary 2016 data: 11,979 newly reported persons
  - 55% males; 43% born between 1945 - 1965
  - Change in case definition accounts for the increase

- The majority of patients have not been treated yet
Hep C in New York City and NYC Hep C Peer Program Sites

The following map shows the rate of newly reported Hep C in 2015 by ZIP code and the location of NYC Hep C Peer Navigation Program sites.

Program Sites
1. After Hours Project
2. AIDS Center of Queens County
3. BOOM/Health
4. Community Health Action of Staten Island
5. Family Services Network of New York
6. Harlem United FROST‘D
7. Harm Reduction Coalition
8. Housing Works Crosby Street
9. Lower East Side Harm Reduction Center
10. New York Harm Reduction Educators
11. Positive Health Project
12. Praxis Housing Initiatives, Inc.
13. Safe Horizon Streetwork LES Project
14. St. Ann’s Corner of Harm Reduction
15. VOCAL-NY
16. Washington Heights CORNER Project

“A true lesson from this program is accepting people where they are. If you are homeless, Hep C can be the least of your priorities. I had to rethink how I approached people.”
- NYC Hep C peer navigator

“When this program began [in 2014], [another navigator] started out with this gentleman in the SRO. He was resistant to everything [and] he was still smoking crack. I took over the site and picked up where [the navigator] left off with this individual. Today he is in HIV care, cleaned [of] Hep C and has his own apartment (because he’s been living in SROs ever since he’s been ill). He has a job [and is] going back to school.”
- NYC Hep C peer navigator

“The trust that people have in me is major; it’s awesome.”
- NYC Hep C peer navigator
HCV in New York City and NYC Methadone Programs

Average Annual Rate Per 100,000 People

- 18.2 - 46.9
- 47.0 - 60.6
- 60.7 - 77.0
- 77.1 - 96.2
- 96.3 - 339.4
- 964.3 (Rikers Island)
- Non-Residential Areas

* Methadone sites in 2017
NYC: Gap in Treatment for Opioid Addiction

Figure 1 Estimation of total opioid users compared to opioid users entering drug treatment.
National: Gap in Treatment for Opioid Addiction

NDUHS 2013; TEDS 2003-2013
Unmet Need for Bupe Treatment

- 1 in 2 Bronx residents report* substance use as greatest health concerns in community
- Substance abuse services perceived as “not very available” or “not available at home”
- Current treatment options fall short of needs
  - According to SAMSHA, there are 124 waivered prescribers in the Bronx as of 2015 → this means capacity for only 3720 patients

*NYC Health Provider Partnership Bronx Community Needs Assessment Oct 3, 2014
Establishing the Buprenorphine Treatment Program

HRSA SPNS funding 2004
- 5 years, $1.9 million
- Integration of buprenorphine & HIV treatment

Care Team
1 site = CHCC
3 MDs
1 PharmD = Bupe Coordinator
Buprenorphine Treatment Program – 10 years
>900 patients, >25 prescribers

Patients receiving buprenorphine treatment

Cunningham

Montefiore
Montefiore Buprenorphine Network

- CHCC: Internal Med
- CFCC: Internal Med
- FCC: Internal Med
- FHC: Family Med
- WBFP: Family Med
Challenges

• Challenges to increasing NSP uptake
  – Reduce stigma towards PWID
  – Need more secondary exchange (stigma and convenience)
  – Pharmacies don’t always adhere to ESAP despite opting in
  – Some hotspot areas don’t have access to NSPs

• Challenges to increasing OAT uptake
  – Reduce stigma of methadone
  – Buprenorphine provider capacity: 30 ➔ 100 ➔ 250, (PA/NP)
  – Buprenorphine induction process more complex than methadone induction – home induction strategy
  – Some hotspot areas don’t have access to methadone
  – Co-located: on-site buprenorphine programs within primary care and especially NSPs (pilot mobile van/NYHRE)
MODELS OF HCV CARE FOR PWID SCREENING
Risk-based Screening and Testing Decrease Over Time

Southern, Litwin, Q Managed Health Care 2013
Physician Adherence

Variation in Screening Among Physicians

Southern, Litwin, Q Managed Health Care 2013
Inpatient HCV Testing

• **SETTING:** The largest healthcare system in the Bronx, NY

• **EHR INTERVENTION:** Birth cohort prompt initiated across three hospital sites in March 2015
  - Providers prompted to test patients with no previously recorded HCV Ab result in the affiliated healthcare system EHR

• **PATIENTS:** Unique patients born between 1945-1965 who were admitted to one of three inpatient sites within the study period. Patients were classified:
  1. Previously tested for HCV prior to hospital admission
  2. Newly tested for HCV during hospital admission
  3. Never tested for HCV
Improved HCV screening

Proportion of Unique Birth Cohort Patients with HCV Testing during 2015 Inpatient Admission

EMR HCV Inpatient Testing Prompt Initiated: 3/24/2015

Percent Newly Tested
Percent Previously Tested

Number of New Ab Positive Patients

January: 5% (30), 29%
February: 5% (11), 29%
March: 14% (32), 32%
April: 33% (32), 34%
May: 33% (39), 35%
June: 32% (42), 45%
July: 31% (42), 45%
August: 33% (52), 45%
September: 31% (41), 45%
October: 33% (41), 41%
November: 33% (53), 41%
December: 33% (53), 41%
What about universal testing?: seroprevalence study in Montefiore ER - **HCV Prevalence 7.5%**

Table 2. HCV prevalence, the prevalence of undiagnosed HCV and the proportion of undiagnosed HCV in an emergency department population in New York City, 2015, by demographic characteristics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Col %</th>
<th>n1</th>
<th>n2</th>
<th>n</th>
<th>n/N, % (95% CI)</th>
<th>P-value</th>
<th>nz/N, % (95% CI)</th>
<th>P-value</th>
<th>nz/n, % (95% CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4,989</td>
<td>100.0</td>
<td>224</td>
<td>148</td>
<td>372</td>
<td>7.5 (6.7, 8.2)</td>
<td></td>
<td>3.0 (2.5, 3.4)</td>
<td></td>
<td>39.8 (34.8, 45.0)</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,925</td>
<td>38.6</td>
<td>126</td>
<td>76</td>
<td>202</td>
<td>10.5 (9.2, 12.0)</td>
<td>&lt;0.001</td>
<td>4.0 (3.1, 4.8)</td>
<td>0.00</td>
<td>37.6 (30.9, 44.7)</td>
<td>0.35</td>
</tr>
<tr>
<td>Female</td>
<td>3,064</td>
<td>61.4</td>
<td>98</td>
<td>72</td>
<td>170</td>
<td>5.6 (4.8, 6.4)</td>
<td></td>
<td>2.4 (1.8, 2.9)</td>
<td></td>
<td>42.4 (34.8, 50.2)</td>
<td></td>
</tr>
</tbody>
</table>

Torian, Felsen, Zingman, CROI 2017
MODELS OF HCV CARE FOR PWID LINKAGE TO CARE
NYC Health Department
Hep C Navigation Programs

Check Hep C Patient Navigation Program

Hep C Peer Navigation Program at Syringe Exchange Programs
Check Hep C Patient Navigation

- Provides linkage to care and clinical care coordination for people chronically infected with Hep C
- Full time patient navigator supports complete Hep C medical evaluation and treatment, as well as reinfection prevention.
- Implemented at 19 NYC sites (community organizations, syringe exchange programs, health centers and hospitals)

Participants
- 48% mental health condition
- 33% injection or intranasal drug use in past year
- 29% homeless or unstably housed

Program Outcomes (January 2015 - December 2016)

- Enrolled: 1052
- Completed Medical Evaluation: 662
- Started Treatment: 531
- Completed Treatment: 374
Cure Rates PWUD versus Non-PWUD

Drug Users
- 96% (44/46)

Non Drug Users
- 95% (41/43)

p = 0.58

Norton, Litwin et al. CROI, Boston, MA 2015
HCV Peer Educators
NYC Hep C Peer Navigation

- Part time peer navigators support people at risk or living with Hep C to complete Hep C testing, link or return to medical care, and prevent infection or re-infection

- Implemented at 15 NYC syringe exchange and harm reduction programs affiliated with Injection Drug User Health Alliance (IDUHA)

Participants*

- 74% mental health issue
- 65% homeless or unstably housed
- 61% have injected drugs

Program Outcomes (December 2014 - December 2016)

- Enrolled* = 4438
- Hep C Positive = 1375
- Linked to Care = 671
- Started Treatment = 99

*Source: IDUHA Citywide Evaluation Study, 2015 Report

* Hep C education & prevention services provided
Thank you

Learn more about the Hep C Peer Navigation Program
hepfree.nyc/nyc-hep-c-peer-navigation-program

Learn more about Check Hep C
hepfree.nyc/check-hep-c-patient-navigation-program

Contact us:
Diana Diaz Muñoz, MPH, Program Manager
ddiazmunoz@health.nyc.gov
(347) 396-2774

Nirah Johnson, LMSW, Director of Capacity Building and Program Implementation
njohnso2@health.nyc.gov
The CHAMPS Study (Baltimore): HCV Peers vs. Incentives vs. Usual Care – Linking HIV/HCV PWUD to HCV Treatment

Tx Initiation
- Peers: 83%; 60% higher likelihood of initiating tx
- Incentives: 76%
- Usual care: 66%

Sulkowski, Ward, Mehta – EASL 2017
Linkage to Care from Syringe Exchange Program (SEP)  
Contingency Management

- 19 clients HCV Ab+ by rapid testing enrolled in CM arm
- 20 clients HCV Ab+ by rapid testing enrolled in control arm
- Incentives: $20/visit for 2 evaluation visits, and WK 4, 8, and 12; $50 if undetectable at week 4
HCV Linkage to Care: Contingency Management may Improve HCV Cascade of Care

Norton, Litwin INHSU 2016
HCV outcomes by buprenorphine treatment retention

HCV Linkage to Care NYC Jails

- High volumes of HCV-infected individuals in US jails
- Short lengths of stay and competing priorities upon release complicate linkage to care
- Objective: To assess the impact of a transitional care coordination program on linkage to care
- Pre-post intervention study
- Pre-intervention rates: NYC DOHMH surveillance data 1/1/2014-6/30/2015
- Linkage in ≤90 days was significantly higher in the intervention group

Outcomes may increase as intervention is ongoing.
MODELS OF HCV CARE FOR PWID
HCV TREATMENT
Project INSPIRE

Innovate and Network to Stop HCV and Prevent complications via Integrating care, Responding to needs, and Engaging patients & providers (PI: F. Laraque/A. Winters; PD: M. Bresnahan)

3-year, $10 mill Centers for Medicare and Medicaid funded Healthcare Innovation Award

**Primary Aim:** Demonstrate a model of service delivery and payment to reduce morbidity and mortality from chronic illness caused by hepatitis C

**Key Strategies:**
- Provide comprehensive HCV care
  - Integrate primary care with behavioral health
  - Provide care coordination, navigation, health promotion, treatment readiness and medication support
- Increase provider capacity
  - Use telementoring to connect primary care, addiction specialists and infectious disease MD’s with HCV specialists
- Develop a payment model
  - HCV related coordinated care reimbursable by Medicaid/Medicare

The project described was supported by Grant Number 1C1CMS331330-01-00 from the Department of Health and Human Services, Centers for Medicare & Medicaid Services.
The contents of this presentation are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Department of Health and Human Services or any of its agencies.
Geographically-Targeted Intervention

HCV Rates per 100,000 by NYC Zipcode

- 19.7 - 50.8
- 50.9 - 63.8
- 63.9 - 82.0
- 82.1 - 103.7
- 103.8 - 347.9
- Non-Residential

Neighborhood of Residence, Project INSPIRE Participants by NYC Zipcode

Percent of Participants
- 0.1%
- 0.2%
- 0.3% - 0.6%
- 0.7% - 8.2%
- No participants

Data represents 1,965 of 2,003 enrolled INSPIRE participants as of June 30, 2016
*Zipcode Tabulation Area
INSPIRE – Patient Workflow

**Pre-Treatment Phase**

1. **Enrollment & Assessment**
   - Consent & Enrollment
     - Program Agreement Form
     - Enrollment Data or Declined Program Form
   - Comprehensive Intake Assessment
     - Assessment Data
     - Referral Data

   - Ready for Treatment
   - Not Ready for Treatment

2. **HCV Care Coordination Plan**
   - No HCV Medical Visit
   - Prior HCV Medical Visit

   - Care Coordination Plan Review
     - weekly chart reviews
     - monthly case conferences

   - HCV Medical Appointment

   - High Intensity Care Navigation
   - Low Intensity Care Navigation

3. **HCV Treatment Plan**
   - High Intensity Medication Adherence Visits
   - Low Intensity Medication Adherence Visits

4. **Post-Treatment Plan**

**Treatment Phase**

- Treatment Plan Review
  - weekly chart reviews
  - monthly case conferences

**Post-Treatment Phase**

- Discharge / Transition Plan
  - Schedule RNA tests for SVR outcome
  - Discharge & Transition Data

- (End of Treatment)
  - Health Promotion Module 7:
    - “Life After Treatment”

  - Refer patient to follow-up services as needed

  - Determine and record patient SVR outcome

**Notes**

- (1-2 weeks after Enrollment)
- Health Promotion Module 1:
  - “What is Hep C?”

- (1-4 weeks after Module 1)
- Health Promotion Module 2:
  - “How to Promote Liver Health”

- (2-4 weeks after Module 2)
- Health Promotion Module 3:
  - “Hepatitis C Treatment”
YEAR 1 HCV CARE CASCADE

Summary

- 95% of participants enrolled received a comprehensive assessment and HCV medical evaluation.

- 92% (n=987) who completed a HCV medical evaluation were deemed eligible to be a treatment candidate.

- 72% (n=819) initiated treatment and 53% (n=609) achieved SVR.

- 96% that returned for SVR testing achieved cure; 11% did not return.
On-site HCV Care at Opiate Agonist Treatment Montefiore Medical Center and Albert Einstein College of Medicine

- Network of community-sited opiate agonist treatment programs in the Bronx, NY
- Comprehensive on-site primary care
- Multidisciplinary HCV care

3300 patients
- 59% Latino, 23% African American, 18% Caucasian
- 65% HCV Antibody positive
- 50% chronic HCV infection
Genotype 1 – PWID Treatment Outcomes Similar to Registration Trials

Directly Observed Treatment (DOT)

Litwin et al, BMC ID 2011
Group Treatment in Action
Adherence higher in DOT vs. both Individual (p=0.0008) and Group (p=0.0003)

Overall adherence: DOT (75.0%) vs. Group (61.4%) vs. Individual (62.4%)
SVR12 high in all 3 arms (p=0.24)

<table>
<thead>
<tr>
<th>Study Arm</th>
<th>ETR</th>
<th>SVR12</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>98.0% (50/51)</td>
<td>98.0% (50/51)</td>
</tr>
<tr>
<td>Group</td>
<td>93.8% (48/51)</td>
<td>93.8% (48/51)</td>
</tr>
<tr>
<td>Individual</td>
<td>96.1% (49/51)</td>
<td>90.2% (46/51)</td>
</tr>
<tr>
<td>Total</td>
<td>96.0% (144/150) (95% CI 92% - 99%)</td>
<td>94.0% (141/150) (95% CI 89% - 97%)</td>
</tr>
</tbody>
</table>
## Factors associated with SVR12

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>N (%)</th>
<th>Exact 95%CI for SVR12</th>
<th>N(SVR12)</th>
<th>SVR12%</th>
<th>Fisher-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>150 (100.0%)</td>
<td></td>
<td>141</td>
<td>94.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/Hispanic</td>
<td>124 (82.7%)</td>
<td></td>
<td>115</td>
<td>92.7%</td>
<td>0.36</td>
</tr>
<tr>
<td>Other</td>
<td>26 (17.3%)</td>
<td></td>
<td>26</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>97 (64.7%)</td>
<td></td>
<td>91</td>
<td>93.7%</td>
<td>1.00</td>
</tr>
<tr>
<td>Female</td>
<td>53 (35.3%)</td>
<td></td>
<td>50</td>
<td>94.3%</td>
<td></td>
</tr>
<tr>
<td><strong>Psychiatric Illness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>67 (44.7%)</td>
<td></td>
<td>60</td>
<td>89.6%</td>
<td>0.08</td>
</tr>
<tr>
<td>No</td>
<td>83 (55.3%)</td>
<td></td>
<td>81</td>
<td>97.6%</td>
<td></td>
</tr>
<tr>
<td><strong>Injection Drug Use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever Injected</td>
<td>113 (75.3%)</td>
<td></td>
<td>107</td>
<td>94.7%</td>
<td>0.69</td>
</tr>
<tr>
<td>Never Injected</td>
<td>37 (24.7%)</td>
<td></td>
<td>34</td>
<td>91.9%</td>
<td></td>
</tr>
<tr>
<td>Any Drug Use Utox BL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>74 (49.3%)</td>
<td></td>
<td>70</td>
<td>94.6%</td>
<td>1.00</td>
</tr>
<tr>
<td>No</td>
<td>76 (50.7%)</td>
<td></td>
<td>71</td>
<td>93.4%</td>
<td></td>
</tr>
<tr>
<td><strong>HIV Coinfection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>21 (14.0%)</td>
<td></td>
<td>20</td>
<td>95.2%</td>
<td>1.00</td>
</tr>
<tr>
<td>No</td>
<td>129 (86.0%)</td>
<td></td>
<td>121</td>
<td>93.8%</td>
<td></td>
</tr>
<tr>
<td><strong>Genotype</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>128 (85.3%)</td>
<td></td>
<td>120</td>
<td>93.8%</td>
<td>1.00</td>
</tr>
<tr>
<td>1b</td>
<td>22 (14.7%)</td>
<td></td>
<td>21</td>
<td>95.5%</td>
<td></td>
</tr>
<tr>
<td><strong>Cirrhosis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>41 (27.3%)</td>
<td></td>
<td>39</td>
<td>95.1%</td>
<td>1.00</td>
</tr>
<tr>
<td>No</td>
<td>109 (72.7%)</td>
<td></td>
<td>102</td>
<td>93.8%</td>
<td></td>
</tr>
<tr>
<td><strong>HCV Treatment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naive</td>
<td>134 (89.3%)</td>
<td></td>
<td>125</td>
<td>93.3%</td>
<td>0.60</td>
</tr>
<tr>
<td>Experienced</td>
<td>16 (10.7%)</td>
<td></td>
<td>16</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Medication</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAA</td>
<td>115 (76.7%)</td>
<td></td>
<td>109</td>
<td>94.8%</td>
<td>0.44</td>
</tr>
<tr>
<td>Non-DAA</td>
<td>35 (23.3%)</td>
<td></td>
<td>32</td>
<td>91.5%</td>
<td></td>
</tr>
</tbody>
</table>
Multivariate Analysis: Drug use not significantly associated with poor adherence (< 80%)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>OR</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent drug use (6 months prior)</td>
<td>1.6</td>
<td>0.7 – 3.6</td>
<td>0.22</td>
</tr>
<tr>
<td>Any drug use at baseline</td>
<td>1.2</td>
<td>0.6 – 2.5</td>
<td>0.55</td>
</tr>
<tr>
<td>Any drug use during HCV treatment</td>
<td>1.1</td>
<td>0.5 – 2.5</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Separate models include age, gender, race, psychiatric illness, homeless status, alcohol intoxication, DAA regimen, and study arm.
Virtual DOT (vDOT) may be as effective as in-person modified DOT (mDOT) for people who use drugs

- 17 patients treated with SOF/LDV
- 12/17 (71%) used illicit drugs within 6 months; 14/17 (82%) have injected drugs
- 16/17 (94%) achieved ETR
- vDOT adherence 91% vs mDOT 83%
Patient-Centered Models of Care for People who Inject Drugs
PCORI: The HERO Study
Overview

- National study - 8 states and 16 sites
- RCT – 1000 PWIDs (injected within 3 months of enrollment) and 600 initiating treatment with fixed-dose once daily sofosbuvir/velpatasvir
- On-site HCV treatment at either primary care center or methadone treatment program
  - Randomized to either patient navigation or DOT
  - Outcomes: Initiation, Adherence, Completion, SVR, Resistance, and Reinfection (over 2 years)
- Stakeholders: National advocacy and medical organizations (e.g. NVHR and HRC), government (e.g. CDC), clinicians, patients, and industry (Gilead, Quest, Monogram, Orasure)
Enrollment 9/30/16 – 4/22/17
On-site HCV Treatment in NSP – WHCP (Scherer and Eckerhardt/Edlin)

Physician on-site ½ day per week
Medication distribution and adherence support on-site – DOT possible
-Scherer: 77 enrolled in program, 28 started tx, 10/10 SVR12 (data available)
-Eckerhardt: 45 enrolled, 26 started tx, 22/26 SVR12 (85%)
Disproportionate Opioid OD in Bronx

937 Drug overdose deaths
New York City, 2015

The Bronx had the largest number of overdose deaths (252) compared with all other boroughs.

Number of unintentional overdose, by borough of residence, New York City, 2015*

- Bronx: 252
- Brooklyn: 223
- Manhattan: 145
- Queens: 144
- Staten Island: 69

Borough data excludes both non-residents and missing data.
Challenges

• Many HCV-infected people remain undiagnosed
  – Contact referral programs for HCV (as in HIV): may increase testing (never before tested); reduce risky behaviors; consider enhanced social network approaches
  – Universal testing strategy

• On-site HCV treatment programs should be available at all methadone programs and NSPs

• PWID achieve SVR at same as non-PWID: develop payer models to cover care coordination models

• IFN era – low rates on reinfection in PWID studies
  – Data needed in DAA era; some reinfection is expected
  – Co-located programs (HCV, OAT, NSP) likely ↓ reinfection
Acknowledgements

NYCDOH
• Ann Winters
• Eric Rude
• Nirah Johnson
• Marie Bresnahan
• Angelica Bocour
• Denise Paone
• Elizabeth Mello

NYSDOH
• Colleen Flanigan
• Allan Clear

Montefiore Medical Center
• Chinazo Cunningham
• Tiffany Lu
• Matthew Akiyama
• Brianna Norton
• Julia Arnsten
• Shuchin Shukla
• Sheila Reynoso

Other Colleagues
• Shruti Mehta
• Mark Sulkowski
• Benjamin Eckhardt
• Brian Edlin
• Matt Scherer
INHSU 2017

6th International Symposium on Hepatitis Care in Substance Users
Jersey City/New York, USA • Wednesday 6 September • Friday 8 September 2017