



Findings from the SHERPA Project: A Study of Active IDUs Residing in the Suburban Towns of Southwestern Connecticut

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Outline of Talk

1. Project Introduction & Background
2. Methods
3. Description of the Study Sample
4. Primary Analyses & Conclusions

Rationale for the SHERPA Project

- Drug use by people residing in suburbia has increased over the past two decades.
- Documented by data from national and state databases:
 - Drug treatment admissions,
 - Drug-related mortality statistics,
 - National drug use surveys of adults and adolescents,
 - Emergency room admissions.
- Nevertheless, almost no comprehensive studies of suburban drug users have been undertaken.

Specific Aims

- Assemble and follow a cohort of IDUs who reside outside the large cities of southwestern Connecticut.
- Collect quantitative sociodemographic, behavioral, and health data in a longitudinal manner.
- Test hypotheses about the influences of environmental context on HIV knowledge, injection practices, HIV, HBV, and HCV infection.
- Determine if the behavior patterns are durable and identify factors that modulate the risk of infection with HIV or other syringe-borne viruses.

Research Methods (N = 462)

- A multiple-methods, longitudinal design
- Quantitative interview every 6 months
- Serological testing every year
- A subsample (N = 43) participated in a qualitative study
 - In-depth interview about their history of drug use and social support
 - Two 2-hour sessions; the 2nd session occurred within 2 weeks of the first
 - Stratified by sex, age, and county of residency; recruited evenly over entire recruitment period

Recruitment

- Respondent-driven sampling
- Inclusion criteria:
 - Injected within the past 30 days;
 - Did not reside in any of the large southwestern CT cities;
 - Indicated a willingness to participate in a longitudinal study and refer other injectors
- Recruitment period: November 2008 to January 2012 (**N = 462**)

Types of Data Collected

Sociodemographics

- Standard demographics
- Educational attainment
- Income from legal and extra-legal sources
- Benefits – from employment, disability, or other sources
- Living situation

Health History

- Self-reported health status
- Self-reported HIV, HBV, and HCV status
- Self-reported drug overdose experience(s)
- Clinical measures included:
 - Addiction Severity Index
 - AUDIT-C
 - Brief Pain Inventory
 - Center for Epidemiologic Studies Depression Scale (CES-D)
 - Beck Anxiety Inventory (BAI)
- Social Support (Zimet et al, 1988)

Serologic Data

Tested at baseline and annually

- HIV
- HBV
 - Core and surface antibodies
 - Surface antigen
- HCV

Other Self-Reported Data

- Injection risk and hygiene behaviors
- Syringe access
- Knowledge about HIV, hepatitis, and overdose
- History of substance abuse treatment
- History of involvement in the criminal justice system

Geospatial data

- Current residence
- Where purchased drugs most often past 6 months
- Where injected most often past 6 months

Qualitative Interview Data

- 12 domains; to obtain a more complete understanding of participants' family history and environment and how drugs may have influenced social, education, housing, legal, or employment situation

Comparison Groups for the Primary Analyses

We compared suburban injectors who reported

- Having injected most often in suburban locations in the past 6 months
- Having injected most often in urban locations in the past 6 months

RESULTS

Study Sample (N = 462)

Age:

- Mean 35.6 ± 11.0 years
- Median 34.3 (25%, 75%: 25.6, 45.4)
- Range = 18 – 62 years

Years Injecting: 11.2 ± 10.3 years

Sex: 62.3% males (288)

Race/ethnicity:

- White 88.4% (389)
- African American 6.4% (29)
- Hispanic 8.9% (40)
- Other 1.5% (7)

Never Married: 66.9% (309)

Socioeconomic Status

Education: \geq High school 80.4% (358)

Income past 30 days:

- Median \$880 (25%, 75%: \$325, \$1600)
- Range = 0 – \$15,000

Currently employed: 28.9% (133)

Of those employed:

- Full-time 45.9% (61)
- Part-time 49.6% (66)
- Seasonal 4.5% (6)
- Receive employee benefits 11.9% (55)

Socioeconomic Status (cont'd)

Living Situation:

- Live with family/friend 67.7% (305)
- Rent or own residence 29.0% (131)
- Other 3.3% (15)

Military Service: 7.1% (33)

Criminal Justice History

- Ever arrested: 89.8% (415)
 - Ever jailed: 80.0% (332/415)
 - Ever convicted: 68.4% (284/415)
 - Ever sentenced: 93.3% (265/284)
- # of times arrested: 9.1 (\pm 12.3)
 - Drug Violation Arrests: 3.1 \pm 5.1
- # incarcerations (not lock-up): 3.8 \pm 7.2

Health Status

Self-reported health status:

- Excellent/very good : 33.3% (154)
- Good: 37.7% (174)
- Fair/Poor: 29.0% (134)

No Health Insurance: 21.6% (100)

Seroprevalence:

HIV+ 1.6% (7) 71.4% (5) aware of infection

HCV+ 40.5% (181) 43.1% (78) aware of infection

HBV+ 24.4% (109) 22.0% (24) aware of infection

- 4.5% (20) acute or chronic infection

- 44.4% (198) susceptible to infection

Substance Abuse Treatment History

Ever in Treatment 77.7% (358)

In Treatment past 6 months 32.0% (148)

Injection Behaviors

- **90.5% (417) identified heroin as drug of choice**
- **70.3% (281) most often buy their drugs in urban locales (past 6 months)**
 - Home delivery 21.2% (94)
- **57.1% (264) inject most often in their own home (past 30 days)**

Injection Behaviors

- **74.7% (343) buy syringes at pharmacies (past 30 days)**
 - Only 3.5% (16) get them from SEPs

- 31.0% (143) reported ever having experienced an overdose
 - Median = 2 (25%, 75%:1, 3)
 - 69.3% (320) said they had heard of Narcan (a medication used to reverse opioid overdoses)

Injection Risk Behaviors (past 30 days)

# Injections	70.5 \pm 152.8
Shots/syringe (median; 25%, 75%)	3 (2, 8)
Engaged in any of the following*	54.1% (250)
Split drugs (any form)*	52.3% (241)
Split drugs in liquid form*	21.5% (52)
Shared drug-mixing water*	33.8% (156)
Shared rinse water*	31.2% (144)
Shared syringe*	21.9% (101)
Syringe-mediated sharing*	14.5% (67)
Shared cooker*	18.8% (87)

* At least once % (N)

Comparison Groups for the Primary Analyses

We compared suburban injectors who reported

- Having injected most often in suburban locations in the past 6 months
- Having injected most often in urban locations in the past 6 months

Hypothesis I

Participants who inject predominantly in the suburbs will have higher incomes, more job stability, lower incarceration rates, shorter injection careers, and fewer injection partners than those who predominantly inject in the cities.

- In bivariate analyses, those injecting most often in the suburbs were more likely to:
 - Have health insurance (80.7% vs 64.7%; $p < 0.001$)
 - Be older (37.2 vs 31.4; $p < 0.0001$)
 - Have longer injection careers (12.1 vs 9.3 yrs; $p < 0.01$).
- No differences noted in sex, race, education, employment status, monthly income, ever having been in jail, or # of injection partners past 6 months

Hypothesis II

Participants who inject predominantly in the suburbs will be more likely to engage in injection-associated risk behaviors than those who predominantly inject in the cities.

Injection-Associated Risk among IDUs who Injected Most Often in Urban vs Suburban Locales

Variables	Odds ratio (95% confidence interval)	
	Bivariate analysis	Multivariate analysis
Injected in Urban Locale (past 6 months)	1.74 (1.12-2.72); p = 0.01	1.74 (1.11-2.71); p = 0.02
Age	0.99 (0.97-1.00); p = 0.12	--
Male	0.64 (0.44-0.94); p = 0.02	0.64 (0.43-0.95); p = 0.02
White race	0.73 (0.44-1.21); p = 0.22	--
High School+	1.24 (0.78-1.98); p = 0.37	--
Unemployed	0.84 (0.56-1.26); p = 0.39	--
Health Insured	1.08 (0.69-1.71); p = 0.73	--
Income (past 30 days)	1.04 (0.88-1.23); p = 0.65	--
Ever in Jail	0.85 (0.53-1.39); p = 0.52	--
Years injecting	1.00 (0.98-1.01); p = 0.64	--
≥6 Injection partners (past 6 months)	1.28 (0.89-1.86); p = 0.18	--

Hypothesis III

Participants who inject predominantly in the suburbs will have lower levels of HIV, hepatitis, and overdose knowledge than those who predominantly inject in the cities.

Knowledge Scores among IDUs who Injected Most Often in Urban vs Suburban Locales

Variables	Regression coefficient (standard error)	
	Bivariate analysis	Multivariate analysis
Injected in Urban Locale (past 6 months)	0.73 (0.69); p = 0.29	0.92 (0.68); p = 0.18
Age	-0.08 (0.03); p = 0.003	--
Male	-0.34 (0.61); p = 0.57	--
White race	2.91 (0.78); p = 0.002	2.78 (0.79); p = 0.0005
High School +	3.56 (0.74); p < 0.0001	3.48 (0.75); p < 0.0001
Unemployed	-0.12 (0.65); p = 0.85	--
Health Insured	0.13 (0.74); p = 0.86	--
Income (past 30 days)	0.64 (0.26); p = 0.02	--
Ever in Jail	-0.86 (0.75); p = 0.25	--
Years injecting	-0.05 (0.03); p = 0.10	--
≥6 Injection partners (past 6 months)	1.29 (0.59); p = 0.03	1.49 (0.59); p = 0.01

Hypothesis IV

Participants who inject predominantly in the suburbs will have lower prevalence of HIV, HBV, and HCV than those who predominantly inject in the cities.

- HBV and HCV seroprevalence were equivalent between groups. HIV infections were too few to be compared.
- We then compared co-infection rates for any two of the three viruses

Co-infection Rates among IDUs who Injected Most Often in Urban vs Suburban Locales

Variables	Odds ratio (95% confidence interval)	
	Bivariate analysis	Multivariate analysis
Injected in Urban Locale (past 6 months)	1.04 (0.56-1.94); p = 0.89	1.77 (0.83-3.78); p = 0.14
Age	1.12 (1.08-1.15); p < .001	--
Male	1.00 (0.58-1.72); p = 1.00	--
White race	0.64 (0.33-1.23); p = 0.18	--
High School+	0.48 (0.26-0.86); p = 0.01	0.46 (0.22-0.96); p = 0.04
Unemployed	1.80 (0.94-3.42); p = 0.08	--
Health Insured	1.85 (0.87-3.92); p = 0.11	--
Income (past 30 days)	0.90 (0.71-1.15); p = 0.41	--
Ever in Jail	2.65 (1.10-6.39); p = 0.03	--
Years injecting	1.13 (1.10-1.17); p < 0.0001	1.13 (1.10-1.17); p < 0.0001
≥6 Injection partners (past 6 months)	1.14 (0.67-1.93); p = 0.64	--

Conclusions

This suburban sample can be characterized as:

- White
- Young
- Single
- Majority completed at least High School

However, they also appear to have

- Low income
- High unemployment
- Frequent interactions with the Criminal Justice System
- Often engage in injection-associated risks

Conclusions

Injection risk behaviors:

- An unexpected finding was that those who inject most often in urban locales were more likely to be at risk.
- Females, regardless of injection locale were at higher risk.

Greater HIV, hepatitis, OD knowledge associated with more injection partners in past 6 months.

Co-infection:

- Consistent with previous studies, co-infection risk increased with duration of injection career
- Level of education had a protective effect

Limitations

- This is not a probability sample and therefore of limited generalizability.
- IDUs above median income may be under-represented in the study sample.
- The self-reported data are subject to recall and social desirability biases.
- There is no urban IDU comparison group.

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Qualitative Study:

The Impact of Injection Drug Use on Healthcare Utilization

Open Coding

- Abstinence
- Addiction
- **Critical Life Experiences**
- Copping
- **Drug Treatment Attitudes**
- **Drug Treatment Experiences**
- Drug Use
- Education Experience
- Emotions
- Employment Experience
- **Health Experiences**
- Housing Experiences
- Hustling
- IDU
- **Legal Experiences**
- Negotiate
- **Overdose**
- Periodic Use
- **Pharmies**
- Progression
- Relapse
- Relationships
- SEP Experience
- Substitutes
- **Violence & Victimization**
- **Withdrawal**

Qualitative Sub-sample Characteristics

- N = 25
 - 48% minority
 - 40% female
 - 4 did not complete high school; 1 college graduate
- 24% employed
- All earned < their town's median income
- 96% had health insurance
- Injection careers ranged from 1 – 34 years

Health Issues Were Ubiquitous

Barb: **bipolar**, borderline personality disorder, **depression**

Carly: chronic **back pain** secondary to epidural

Donna: **anxiety**, dental problems, **depression**, **fibromyalgia**

Duane: **anxiety**, paranoid schizophrenia, **suicide attempts**

Ed: **seizures**

Emma: appendectomy, **bipolar**, **cellulitis**, **depression**, **HCV**, **lower back problems**, sinus problems

George: **HCV**

Henry: ADHD, **anxiety**, **depression**, **HCV**, speech problems as child

Isaac: **abscess**, **anxiety**, **depression**, endocarditis

Jennifer: **anxiety**, perforated nasal septum

John: **HCV**, **PTSD**

Karl: **anxiety**, **seizures**

Latoya: chronic & severe inflammatory response to flea bites

Luz: asthma, chronic pancreatitis, diabetes, **HIV**, hypertension

Mark: **bipolar**, **HCV**, **PTSD**

Norman: gastric ulcer

Oliver: **HBV**, **HCV**

Peter: motor vehicle accident

Phyllis: **anxiety**, **bipolar**, motor vehicle accident

Ramon: asthma, pulmonary embolus, **seizures**

Shawna: **anxiety**, **depression**, **seizures**

Sue: **depression**, **PTSD**

Tony: cutting, **depression**, **HCV**

Fear: A Deterrent to Seeking Services

- [When asked about following up on positive HCV test results] I am terrified so no I didn't, no
45 y.o. White female
- [Needing surgery to put in a stent] I put it off, puttin' it off, puttin' off, put it off for two years till finally my doctor, the one that retired looked at me and he said, "Do you wanna leave your son motherless?"
39 y.o. African American female

Providers as Facilitators

- I'm seeing a therapist because my PCP pretty much kicked my ass through the therapist's door...he's a good doctor, he knew that he couldn't handle and that someone else needed to.

45 y.o. White female

- I used to take this other medication Dilantin cuz I used to have seizures and that was like eatin' away at my methadone. So like halfway through the day I would start feelin' like shit...which would make me use so I told my primary about it, she detoxed me off the, the Dilantin and ever since then I've been fine.

36 y.o. White male

- He called it an anti-psychotic, I'm like *UGH OH*, stop right there! I don't know what anti-psychotic means, but it doesn't sound like I'm that way. I don't want it. And then he explained, so I said I'd try it.

37 y.o. White female

Medical Mismanagement Contributing to Drug Problems

- We were hit, I, we were at a stop sign and somebody rear-ended us and they were movin' and then they put me on Percocet and then they put me on Demerol, and that's where the major problems came in...I was just trashed all the time on them and then I started taking more and more and more, I was on them for well over a year

30 y.o. White female

- [Insurance] wouldn't cover Lexapro...And instead of going back to the doctor and saying I need something different, I chose to not. And it was dope or Lexapro. So you know where I went unfortunately

45 y.o. White female

Stigma as Barrier to Interacting with Health & Social Services

- I said I watched him give an old lady and scan the barcode and it came up \$2.23 and then I got up there and she typed it in and it came up \$4.95.
30 y.o. White female
- ...instead of her just putting me on the wait-list, she's going to make me jump through hoops. Then put on the wait-list. She says, "Well, you got to prove to me that, that uh, that you really want this, all that." I said, "well, I wouldn't be in your office if I didn't want it, I said well what do you want me to do? What's going to satisfy you?" "Oh, well, I want you to go – I want you to do this for 30 days." I said, "let me tell you something, if you want me to do that for 30 days, all your other clients, I want them to do it for 30 days, too. 'Cause I'm not going to jump through no fucking hoops by alone, and nobody else is going to do it."
29 y.o. African American male

Compartmentalization Can Adversely Affect Quality of Healthcare

- Selectively withhold information
- Maintain different sets of service providers

I started to get a streak and...so I knew when push came to shove that I had to go. And so I said, "You need to take me to [Hospital A]." I didn't wanna go to [Hospital B] only because it's right in my backyard. I didn't really want anybody to know. As I told you, I felt embarrassed 'cause I had done this to myself. Um ironically enough, whether they thought I did it to myself or it was irrelevant, I didn't see it like beforehand, but once I got there they don't care. They just treat and they don't ask questions.

45 y.o. White female

I was working at [a high school] as an electrician when they had to close it for the swine flu. So I just figure I have the swine flu and that was what I let me doctor believe by not telling him I was an intravenous drug user, so he - it went misdiagnosed for nearly a month. And as my symptoms got worse, and worse, and worse.

25 y.o. White male

Not disclosing drug use:

I: Does your doctor – the one you see for your AIDS, does he know you're using again?

P: No. I don't tell him.

I: You don't tell him? And how come you don't – has he ever known? Does he know about your drug use?

P: He knows about my drug use, I don't want to tell him [about relapsing] because I want to get over it.

45 y.o. Hispanic female

Not telling doctors about IDU history before each of two major surgeries:

I: Why didn't you tell the doctor so they would know just so, you know, to help you recover? I'm curious.

P: Because then they wouldn't give me pain medicine

41 y.o. White female

Conclusions

- Providing appropriate healthcare and social services is complicated by injectors' experienced or anticipated stigma and tendency to selectively mete out health information or make use of specific services.
- Further research is needed to explore the quality of injector/provider interactions and possibly develop interventions to improve providers' ability to interact more effectively with their IDU patients.
- Interventions are needed that refer injectors to appropriate service providers and to promote full disclosure of their health histories.