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# The effectiveness of needle exchange programs in the United States and West Virginia

Margie J. Phillips

*Marshall University*, philli10@marshall.edu

Alberto Coustasse

*Marshall University*, coustassehen@marshall.edu

Sara Johnson

Briana Washington

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# THE EFFECTIVENESS OF NEEDLE EXCHANGE PROGRAMS IN THE UNITED STATES AND WEST VIRGINIA



*Margie J. Phillips, Alberto Coustasse, Sara Johnson and Briana Washington*

# Introduction

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Needle Exchange Programs, NEP's, operate by exchanging:

- Used hypodermic needles, syringes, and other drug preparation tools
- Used clean, sterile equipment and safely disposing used materials at no cost to the patients.

# Introduction

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**The purpose of the program is to provide comprehensive harm reduction services, which include:**

- HIV/hepatitis testing
- Referral to substance use disorder treatment
- Medication-assisted treatment
- Referral to medical, mental health, and social services
- Education about overdose prevention and safer injection practices

**Preventative tools include:**

- Counseling, condoms, and vaccinations to protect against HIV, sexually transmitted diseases, and viral hepatitis.



# Introduction

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- Needle Exchange Programs are a controversial piece of public health policy.
- Debate over who should fund these programs.
  - Specifically if the federal government should fund the programs.
- Over 50% of programs were administered through non-governmental organizations, but operated with guidance from local and state health departments.
- Funded through grants, local and state funds, and donations.

# Data collected by the West Virginia Health Statistics Center

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- West Virginia ranked #1 in drug overdose deaths in 2015, with a rate of 41.5 deaths per 100,000 people. Deaths attributed to opioids, namely heroin and fentanyl, are on the rise in the state.
- West Virginia currently ranks #1 in the country in incidence of acute hepatitis B and hepatitis C. Analysis of 2012-2015 surveillance data showed that between 25-40% of acute hepatitis C cases reported injection drug use as a potential risk factor for their infection.
- A recent study identified 28 counties in West Virginia as high risk for rapid dissemination of HIV and hepatitis C among PWIDs. Increasing access to HRP in high-risk areas can reduce new viral hepatitis and HIV cases by decreasing the sharing of syringes and other injection equipment.

# West Virginia Syringe Exchange Programs

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- Cabell-Huntington Health Department  
Huntington, WV
- Kanawha-Charleston Health Department  
Charleston, WV                      2 locations
- Jackson County Health Department  
Ripley, WV
- Beckley-Raleigh Health Department  
Beckley, WV
- Greenbrier County Health Department  
Ronceverte, WV
- Fayette County Health Department  
Fayetteville, WV
- Lewis County Health Department  
Weston, WV
- Harrison-Clarksburg Health Department  
Clarksburg, WV
- Marion County Health Department  
Fairmont, WV
- Valley Healthcare Systems  
Kingwood, WV                      Preston County
- Milan Puskar Health Department Right  
Morgantown, WV                      Monongalia County
- Wheeling-Ohio County Health Department  
Wheeling, WV                      2 locations
- Ohio Valley Harm Reduction Coalition  
(Northwest Health Systems)  
Weirton, WV                      Brooke County
- Hancock County Health Department  
New Cumberland, WV
- Berkeley County Health Department  
Martinsburg, WV
- Jefferson County Health Department  
Kearneysville, WV

# 2017 Harm Reduction Program Funding Awards

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▪ Wyoming County Health Department	\$80,000
▪ Cabell-Huntington Health Department	\$75,000
▪ Kanawha-Charleston Health Department	\$75,000
▪ Greenbrier County Health Department	\$68,000
▪ Harrison-Clarksburg Health Department	\$65,000
▪ Ohio Valley Harm Reduction Coalition	\$55,000
▪ Berkeley County Health Department	\$54,000
▪ Jefferson County Health Department	\$47,000
▪ Fayette County Health Department	\$31,000
▪ Hampshire County Health Department	\$25,000
▪ Milan Puskar Health Right	\$25,000

The award was part of a \$5.88 million State Target Response to the Opioid Crisis Grant provided to West Virginia through the DHHR Substance Abuse and Mental Health Services Administration.

# Purpose

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To determine the effectiveness of needle exchange programs and the impact on the reduction of HIV and viral hepatitis infections in people who inject drugs in the United States.

This literature review further explored if these programs have had a positive impact on the reduction of HIV and viral hepatitis in West Virginia.

# Methodology

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## **Hypothesis:**

The hypothesis for this study was the incorporation of the West Virginia Needle Exchange Program will create a substantial decrease in the number of HIV and hepatitis C virus spread through needle sharing among injection drug users.

# Methodology

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- The literature review included 30 references.
- Keywords: 'syringe service programs,' or 'needle exchange program,' and 'United States' or 'West Virginia,' and 'advantages,' or 'disadvantages' or 'effectiveness' and 'HIV,' or 'viral hepatitis,' or 'HCV'.
- Databases: Academic Search Premier, Business Source Premier, Point of View Reference Center, Alt-Health Watch, PubMed, and Google Scholar.
- Reputable websites of the Center for Disease Control and Prevention.
- Articles written between 2006 and 2017.
- Articles written only in English were assessed.

# Methodology

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- Participants for semi-structured interviews:
  - Directors of Kanawha- Charleston Health Department and the Cabell-Huntington Health Department Harm Reduction programs
- Participants given an IRB informed consent before the interview.
- The interviews were recorded by phone and transcribed by the interviewers

# Results

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- A study of the first U.S. based needle exchange program in Tacoma, Washington found that needle exchange programs was associated with greater than **60% reduction** in the risk of contracting hepatitis B or C.
- Another study analyzed the cost effectiveness of needle exchange programs by Nguyen, Weir, Jarlais, Pinkerton, and Holtgrave (2014). Results showed that for **every dollar invested** in needle exchange programs, then at least **6 dollars are saved in averted costs** associated with HIV.
- Other studies prove that needle exchange programs are cost effective compared to the cost to treating a patient with HIV. The cost of preventing HIV infection through needle exchange programs range from **\$4,000 - \$12,000** compared to treatment for a patient with HIV that can cost up to **\$190,000**.

# Multi-person Use Needles Exchange

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Baltimore needle exchange program used 3 Short Tandem Repeat (STR)

- 315 IDUs participated
- 2512 syringes exchanged and tested
- Syringes were categorized as Multi-Person Use (MPU), Single Person Use (SPU), or No Detectable Genomic DNA (NDGD)
- 56% of syringes showed indication of MPU
- 14% showed indication of SPU
- 30% were No Detectable Genomic DNA

# Needle Exchange Program Locations

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Study conducted by the North American Syringe Exchange Network

- 153 of the Syringe service programs (SSPs) participated in a mail/telephone survey to determine the locations and demographics of the programs
- Programs were broken into sections of Midwest, Northeast, Puerto Rico, South, and West.
- They were further differentiated into development environments of rural, suburban, and urban.
- The West had the highest number of rural SSPs with 30%, while the South had the least at 7%.
- The West had the most SSPs with 15%, while the South and Puerto Rico tied for least amount at less than 0.5%.
- For urban SSP locations, the South had the highest percentage at 86%, while the West had the lowest percentage at 51%

# Individuals with Seroprevalence of HCV and HIV

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The study used 130 program participants and conducted on-site 30-minute interviews along with HIV and HCV seroprevalence tests.

- Self reporting
- Receptive or Distributive sharing
- 93% of the sample stated they did not participate in receptive sharing
- 83.9% of participants stated they did not conduct distributive sharing
- 88 individuals had anti-HCV seroprevalence and 3 had HIV seroprevalence

# West Virginia's Need for Disease Control for PWID

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- HIV and Hepatitis C have been growing concerns for WV
- 74 individuals were diagnosed with HIV in WV
- Rates of HCV had increased in WV by 36%
- IDU made up 10% of HIV transmission cases in WV
- WV has ranked #1 for drug overdoses
- WV ranked #1 for cases of Hepatitis C.
- 28 counties in WV have been deemed high risk for spread of HIV and hepatitis C among People who inject drugs

# Discussion

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- Study Limitations of Lit Review (search strategy, researchers and publication bias)
- Lacked statistical evidence to the effectiveness of needle exchange programs
- Several studies relied only in opinions from participants [recall bias].
- Many of the studies may have been biased due to research design, data collection, or funding.
- West Virginia's needle exchange program is relative new, so it was difficult to find current data and statistics on the effectiveness of the program

# Discussion

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The support of increased federal spending and access to needle exchange programs has remained a goal of the National HIV/AIDS Strategy.

The cost benefits associated with treating persons who inject drugs to limit or stop the spread of HIV and hepatitis C virus are much lower than treating those who are already infected with these diseases.

Smaller harm reduction programs across the U.S. have had to close due to lack of money as these programs have been state funded rather than federally funded.

# Sharps Disposal Units

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- Drive-up repository, which people can use anonymously, located outside the Cabell-Huntington Health Department office at 703-7th Avenue.
- The 24/7 38-gallon outdoor kiosk operates separately from the department's needle exchange program and accepts all syringes regardless of origin.
- The kiosk was purchased through the Cabell County Substance Abuse Prevention Partnership, which is primarily funded through federal and state grants.

# Environmental Hazards

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“Clean River Project” volunteer holds up a fish bowl filled with hypodermic needles recovered during 2016 Merrimack River, in Methuen, Massachusetts.

Cleanup crews have recovered hundreds of needles in abandoned homeless camps along the river and in floating piles of debris.



# Environmental Hazards

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Improper sharps disposal can affect janitors, maids, pest control workers, waste management, groundskeepers, workers, children, and household pets.

A single needle stick can mean weeks of taking drugs to prevent the spread of infection, with side effects including nausea, depression, and extreme fatigue as well as months waiting for expensive periodic tests to reveal whether contracted HIV/AIDs or hepatitis B or C.

# Conclusion

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Based on studies conducted on past attempts at needle exchange programs there has been evidence that these programs are effective in the reduction of the spread on HIV and hepatitis C along with cost savings. Due to federal policies that have reinstated the use of needle exchange programs up-to-date data is not readily available.

**QUESTIONS?**