Needle Exchange Programs (NEP) and HIV

An investigation of the evidence that needle exchange programs reduce the risk of HIV and other infectious diseases.

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Recent claims about HIV and NEP

Andresen (2010). A cost-benefit and cost-effectiveness analysis of Vancouver's supervised injection facility.

"Reduction of risk from participation" references Des Jarlais (1996).

UHRI (2013). Drug situation in Vancouver.

 "a growing body of literature to support harm reduction interventions as a key approach to controlling the HIV epidemic" references Gibson (2001), Wodak (2005), DeBeck (2011). DeBeck is not relevant.

Fraser Health (2012). A Proposed Abbotsford Harm Reduction Service Plan.

"Harm reductions strategies such as needle exchanges have been demonstrated to reduce the risk of blood borne disease transmission among IDUs by providing them with a clean supply of needles" references Wodak (2005), WHO (2004), IOM (2006).

Supplementary Slide, not for Presentation Choosing Studies

- Must bear on the risk of developing signs of a viral disease (HIV, Hepatitis B, C) with or without NEP.
- Must show a positive or negative impact of NEP.
- Must not be a repetition of another study.
- Must watch a specific group of individuals and not just watch trends over populations (epidemiology).

Supplementary Slide, not for Presentation Getting to the data

- Relevant references in Gibson (2001) are Bruneau(1997), Des Jarlais(1996), Hagan(1999), Schechter(1999)
- Wodak (2005) references related to studies of HIV incidence (seroconversions) are Bruneau(1997), Des Jarlais (1996), Strathdee(1997). Monterrosso(1997) showed no statistically significant benefit of NEP.
- Relevant reference in IOM (2006) are Bruneau(1997), Des Jarlais(1996), Schechter(1999), Strathdee(1997).

Des Jarlais, 1996

- Most commonly cited paper.
- 3.5-5.8 times greater risk of becoming HIV+ in non-NEP users.
- Not a study, but a meta-analysis:
 - Included two current studies, one included only NEP users.
 - One historical data source included only non-NEP users.
- Major differences between the data sources in gender, race, age and frequency of injection.
- Short follow-up (6.5-9.7 months).

Strathdee, 1997 Schechter, 1999

- ▶ Both papers report on the same HIV outbreak in Vancouver among IVDUs in 1996/1997, with a NEP present.
- Strathdee reports that 23 of 24 who became HIV+ reported that the NEP was their main source of needles.
- Schechter reports, "Of 694 subjects [IV drug users], the 15-month cumulative HIV incidence [number of people changing from HIV-negative to HIVpositive] was significantly elevated in frequent NEP attendees (11.8 ± 1.7 versus 6.2 ± 1.5%)."
- Despite this, Schechter concludes, "this observation about one particular needle exchange should not lead to the conclusion that all needle exchanges are ineffective."

Bruneau, 1997

- A designed study with a single group under study: IVDUs in Montreal, with NEP available.
- Long follow-up (1988-1995).
- Rarely cited.
- Abstract excludes the most important findings.
- Table 5 shows the risk of becoming HIV+ is 10.2-22.9 times greater for exclusive NEP users compared to never-users!!!!

Explanations of Bruneau

- Researchers have tried to claim that Bruneau was a bad study (even its own authors), without success.
- There are some indications that NEP users use more drugs than non-NEP users.
- HIV tests measure antibodies. The more foreign substances introduced to your body, the more antibodies (not just to the drugs themselves, but other components of street drugs).
- Could it be that IVDU are testing false positive on HIV and other tests due to years of exposure to highly impure and sometimes quite toxic street drugs?

Hagan, 1999

- A designed study (single cohort)
- Rarely cited
- Observed IVDUs in Seattle, with NEP available.
- Regular NEP users 1.81 times more likely to become Hep B+ than non-users. 1.3 times more likely to become Hep C+. No information on HIV.
- Earlier study in Tacoma found the opposite, but used a less reliable retrospective design.

Signs of bias

Why the bias?

- Bruneau is rarely cited, and then only in disparaging terms.
- Bruneau did not even report her own major findings in the abstract.
- Des Jarlais is always referenced, and often praised, despite its problematical (lack of) design.
- Vancouver researchers mostly vocal proponents of NEP.
- Schechter (1999) tried to turn his paper's obvious conclusions on its head.

WHO is Wodak

- Wodak (2005) is often referenced, but this paper is not indexed, because it is in a journal supplement – sponsored and edited by another organization.
- WHO (2004) is also referenced by Fraser Health, but is also by Wodak (and the same co-author, Cooney).
- > This means that the 3 Fraser Health references are really only 2.
- Who sponsored the Wodak (2005) supplement? WHO sponsored it.
 Wodak(2005) = Wodak + Cooney + WHO.
 WHO(2004) = Wodak+ Cooney + WHO.
- Wodak (2006) is an indexed paper, and would be a better reference, but it admits that the results of Monterrosso are not statistically significant. Wodak (2005) omits this awkward fact.

Wodak's Padding

- Wodak (2005) claims that 6 out of 10 studies evaluating HIV seroconversion as an outcome found that NEP helped and 2 found the opposite:
 - Des Jarlais (1996), previously discussed.
 - Health Outcomes International (2002). "The study updates and expands a study previously undertaken by Hurley, Jolley and Kaldor" (see below).
 - Heimer (1993). Looked for HIV in syringes, not people.
 - Hurley (1997). Compared HIV prevalence (not incidence) in cities with/ without NEP.
 - Ljungberg (1991). Compared a small town with NEP with the rest of Sweden.
 - Monterrosso (2000) results not statistically significant.
- Only one usable study actually looked at HIV seroconversion in NEP users versus non-users (Des Jarlais) and found a statistically significant result!
- So, in reality, only 1 study supports NEP usage and 2 provide evidence against.

Conclusions

- Research on NEP is contaminated by many researchers being proponents (and benefiting financially).
- Studies on NEP by health authorities are clearly biased towards NEP.
- Bruneau's 1997 study must not be forgotten.
- Reasons for high rates of HIV+ in IVDU must include false positive HIV tests.

Disclosure

- I have never received funding for any of my research on HIV, AIDS or other scientific issues.
- I have been paid as a journalist for writing a small number of articles.
- My position as President of two related organizations is uncompensated.
- My employment is in telecommunications, and is totally unrelated to this issue.

Thank You!

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Supplementary Slide, not for Presentation Data Sources

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- Strathdee SA et al. Needle exchange is not enough: lessons from the Vancouver injecting drug use study. AIDS. 1997 Jul 11; 11(8): F60–5. <u>http://davidcrowe.ca/</u> <u>SciHealthEnv/papers/407-NEP%20in%20Vancouver.pdf</u>
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Supplementary Slide, not for Presentation Other references

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