THE WORLD BANK

UNSW THE UNIVERSITY OF NEW SOUTH WALES

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POLICY BRIEF

Epidemiological impact and return on investment of needle-syringe programs in Cebu, Philippines

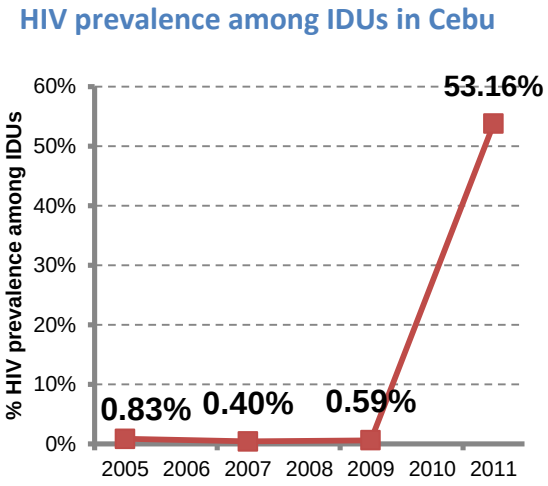
1. Background

The Philippines is one of nine countries in the world with increasing HIV cases.

- There was a ***25% increase of HIV cases between 2001 and 2009***.
- While the national HIV prevalence remains below 0.1% of the adult population, HIV prevalence among the most-at-risk populations (MARPs) has substantially increased from 0.08% in 2007 to 0.47% in 2009.
- The HIV epidemics in the Philippines are predominantly urban in distribution, severely affecting such major urban hubs as Metro Manila and Metro Cebu. This is likely due to the fact that risk behaviours are more prevalent in urban areas (due to larger networks of sexual partners), and drugs more widely available.

The most alarming trend of HIV infections has been among IDUs, specifically in Cebu province.

- During 1984-2006 there were only 7 reported cases in the Philippines; in 2010 alone there were 147 reported cases for 2010.
- ***In Cebu, HIV prevalence among IDUs has increased from 0.59% (n=341) in 2009 to 53.16% (n=301) in 2011.*** This trend could continue to grow, as seen in other parts of the world, if not checked in time with effective interventions.
- In Metro Cebu, there are an estimated 6,000 IDUs.
- ***Only 48% of IDUs reported using sterile injecting equipment the last time they injected.***



- Most IDUs report that they regularly share injecting equipment.
- A 2008 report published by the Joint United Nations Programme on HIV/AIDS (UNAIDS) indicated that the prevalence of sharing injecting equipment is still very high, with 29% of IDUs self-reporting use of an unsterile needle/syringe the last time they injected. Sharing HIV-contaminated injecting equipment is an efficient mode of HIV transmission.

Harm reduction programs for IDUs

- Needle-syringe programs (NSPs) are a safe and effective public health measure to reduce spread of HIV and other blood-borne infections among IDUs. NSPs may provide a range of services including injecting equipment, education on reduction of drug-related harms and referral to drug treatment and other services.

- Reports on the success of implementation of NSPs in Thailand and Vietnam cite the importance of cooperation between government and nongovernment agencies as well as gaining local acceptance by key community people and law enforcement groups. However, many countries in Asia have criminal laws against possessing or distributing drug paraphernalia, including clean syringes, thus deterring IDUs from admitting drug use to social workers and preventing social workers from distributing clean needles.

- To date, harm reduction programs for IDUs, such as needle & syringe programs (NSPs), have not been endorsed within the Philippines due to R.A. No. 8504 (the Philippines AIDS Prevention and Control Act of 1998) and R.A. No. 9165 (the Comprehensive Dangerous Drugs Act of 2002). Despite protection for people living with HIV (PLWH) under RA 8504, stigma and discrimination in various sectors (work, community, health services, etc.) against PLWH, including those who inject drugs, may be among the barriers that hinder effective implementation of HIV/AIDS interventions such as NSPs.

This study aims to assess the potential cost-effectiveness and return on investment of implementing NSPs in Cebu city. This brief is based on a full report on the "**Return on investment of needle-syringe programs in the Philippines**" by David P. Wilson, Josephine Reyes, Cliff C. Kerr, Richard T. Gray.

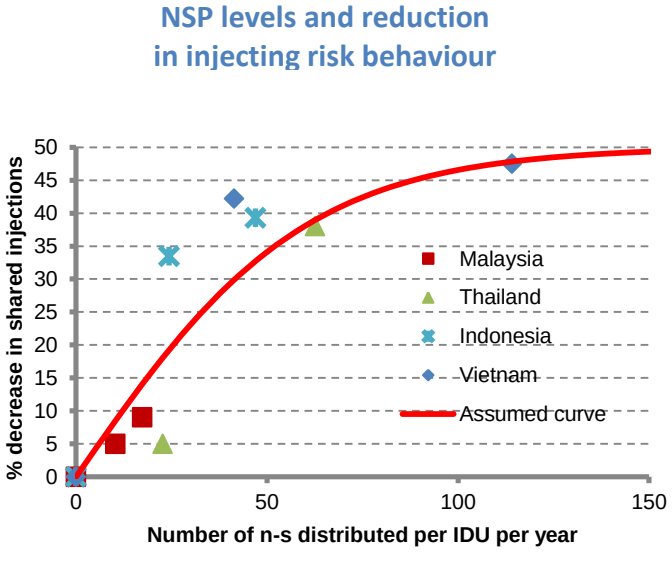
2. Needle-syringe programs: costs and effects

The cost of NSPs

- A review was conducted based on the GDP in the Philippines that estimated the cost per IDU reached with NSPs would be approximately US$122 ($76-198, 95%CI).
- A recent costing study of HIV programs in the Philippines report a cost of US$0.15 (~PhP 6) per needle-syringe.

The effect of NSPs on injecting risk behaviour

- A review of available data from countries in the region where NSPs have been implemented show a decreasing association of the extent of sharing of injecting equipment as the number of needle-syringes distributed increases.



- A best fitting rate of relative decline in sharing with NSP levels was obtained to produce the assumptions for the expected relationship between NSP levels and risk behaviour in the Philippines over time.

3. Assessment of implementing NSPs in Cebu, Philippines

Possible target levels for NSP implementation

- Universal access targets published by UNAIDS report that NSPs implemented with less than 100 needle-syringes per IDU per year are considered low.
- A recent costing study on HIV programs in the Philippines reports an investment plan of 5 needle per week per IDU for ~5% of population, corresponding to an estimated NSP level of ***12.5 needles per IDU per year***.

The investment plan target of ~12 needle-syringes per IDU per year (N=12.5) was investigated, as well as higher levels of NSP implementation at 25, 50 and 100 needle-syringes per IDU per year (N=25, 50, 100).

Impacts of NSP implementation

All NSP level scenarios investigated were found to be ***cost-saving***

- except for NSP levels of N=50 and 100, which were found as ***very cost-effective*** with incremental cost-effectiveness ratio (ICER) of 40 and 392, respectively (assuming a threshold of 1*GDP = $4300 in 2012)
- with health care costs savings greater than costs of program implementation, and
- with a positive amount of disability years (DALYs) averted

5 - year NSP implementation (2013-2018)		
	N = 12.5	**N=50**
NSP investment	**~US$36,000**	**~US$143,000**
Health care Costs saved	**~US$37,000**	**~US$130,000**
Cost/DALY averted	**~US$740**	**~US$860**
Cost per infection averted	**~US$450**	**~US$510**
Infections averted	**80**	**280**
Deaths averted	**5**	**17**

If NSPs were implemented in Cebu to a low level, at N=12.5 needle-syringes distributed per IDU per year, for five years then

- the financial return in healthcare costs by 2018 that do not need to be spent due to infections averted would amount to $1.07 (0.64 - 1.39) for every $1 invested.
- HIV infections averted would yield further benefits in the longer-term of reduced HIV-related healthcare costs. With 3% discounting, for every $1 invested in low-to-moderate levels NSPs in Cebu, the returns would be $6.21 (4.37 – 9.00) in healthcare costs that are saved.

If NSPs were implemented in Cebu to a moderate-to-high level, at N=50 needle-syringes distributed per IDU per year, for five years then

- over a lifetime horizon, $6.02 (3.74 – 8.12) would be returned in healthcare savings for every $1 invested.

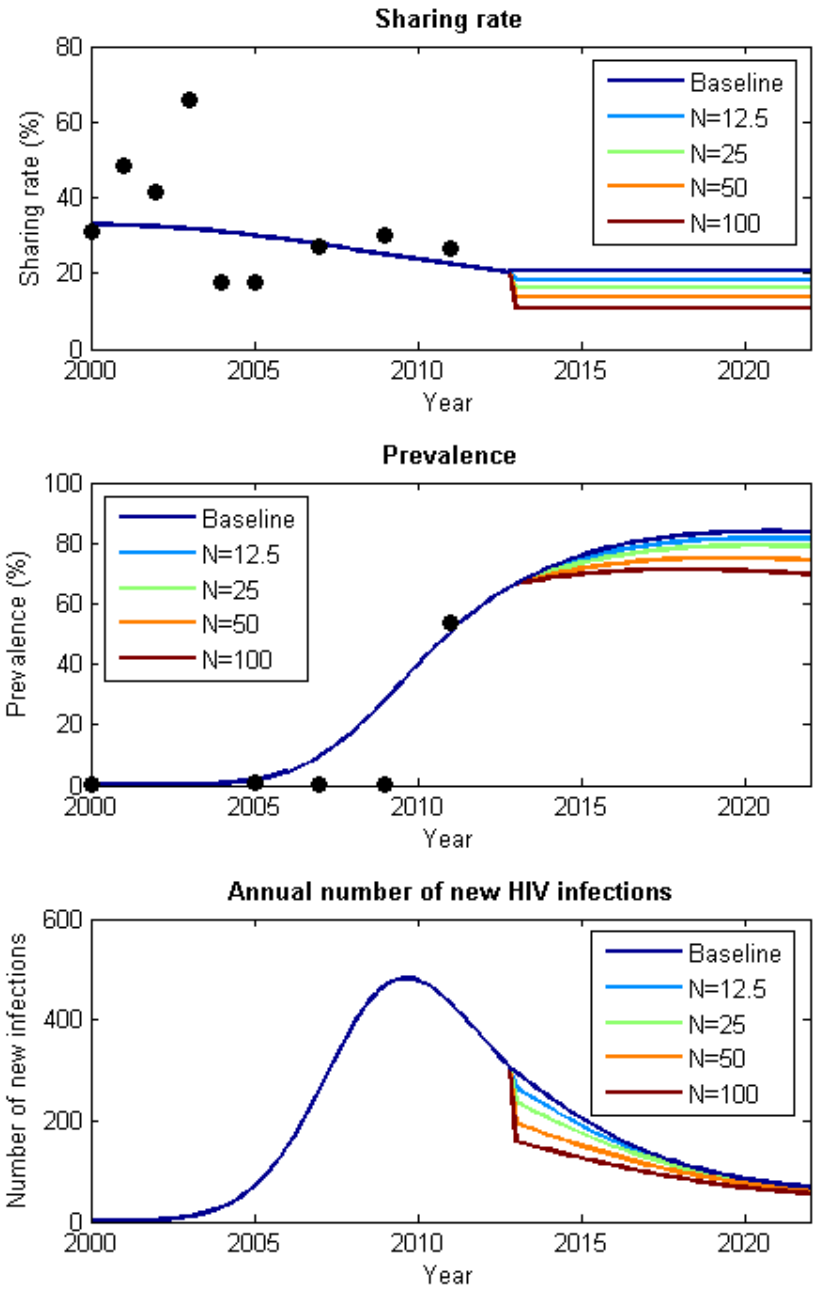
If NSPs were implemented in Cebu to a high level, at N=100 needle-syringes distributed per IDU per year, for five years then

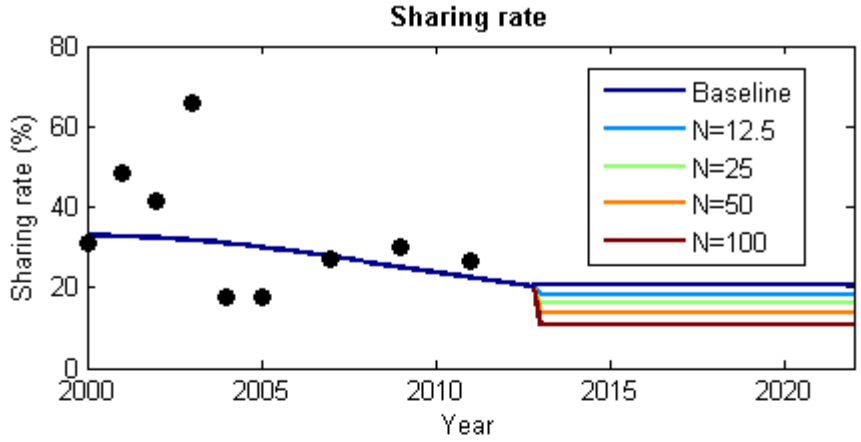
- epidemiological benefits include 400 averted HIV infections and 23 averted deaths.
- each DALY averted will cost ~US$1220, with health care costs savings of ~US$183,000
- over a lifetime horizon, $4.27 (2.75 – 5.84) would be returned in healthcare savings for every $1 invested.

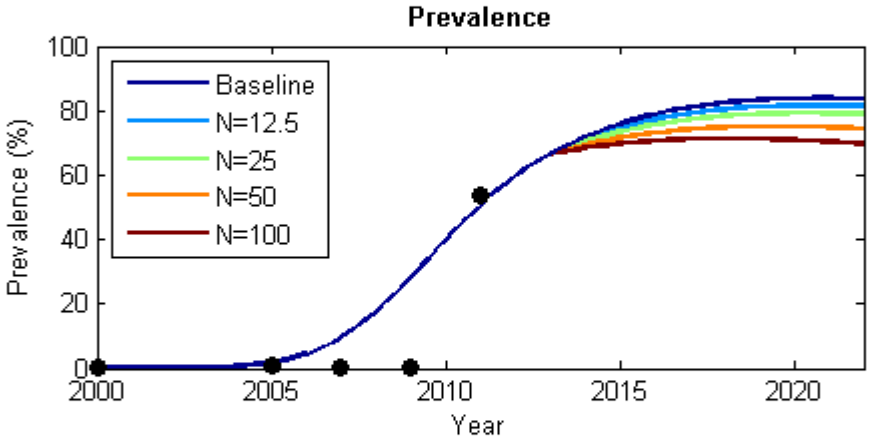
Summary of results

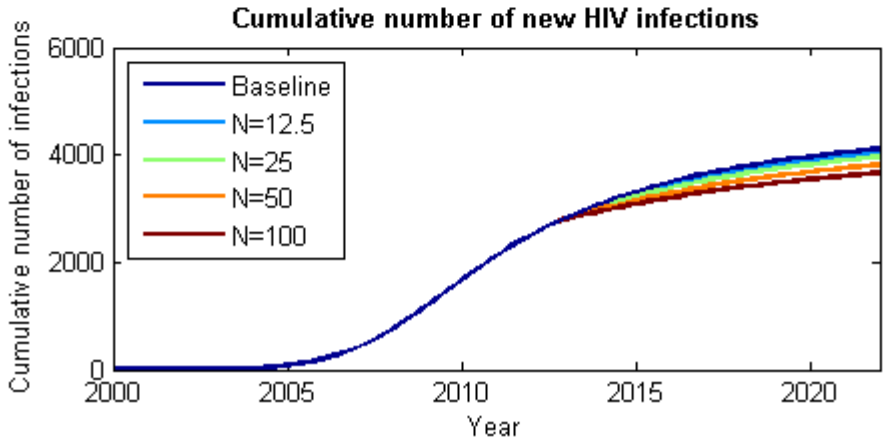
- In all scenarios, a decrease in projected prevalence and incidence compared to baseline is observed for the period 2013-2023.
- Both short-term and long-term epidemiological benefits (infections and deaths averted) increase as NSP levels are increased.
- All scenarios of NSP implementation lead to savings in health care costs.
- A five-year NSP implementation has a low return on investment and can be more costly (ROI <1) in the short term for high-level NSPs (N>=50).
- However, a five-year NSP implementation will have high (four- to six-fold) return on investment based on healthcare costs savings projected into a lifetime horizon (2013 - 2113).
- Although the return on investment ratio is less for greater NSP levels, the absolute total healthcare costs savings are greater ($2.3 million for N=100, $1.6 million for N=50 compared with $420,000 for N=12.5).

Sharing rate, HIV prevalence and incidence in Cebu









- **NSPs have been shown to be very effective and cost-effective in numerous countries in Asia for reducing risk of HIV infection and saving healthcare costs associated with HIV infection.**
- **If they were implemented in the Philippines they are predicted to also be effective and cost-effective, costing around US$500 per infection averted.**