

Epidemiological and economic evaluation of NSPs in the Northern Territory

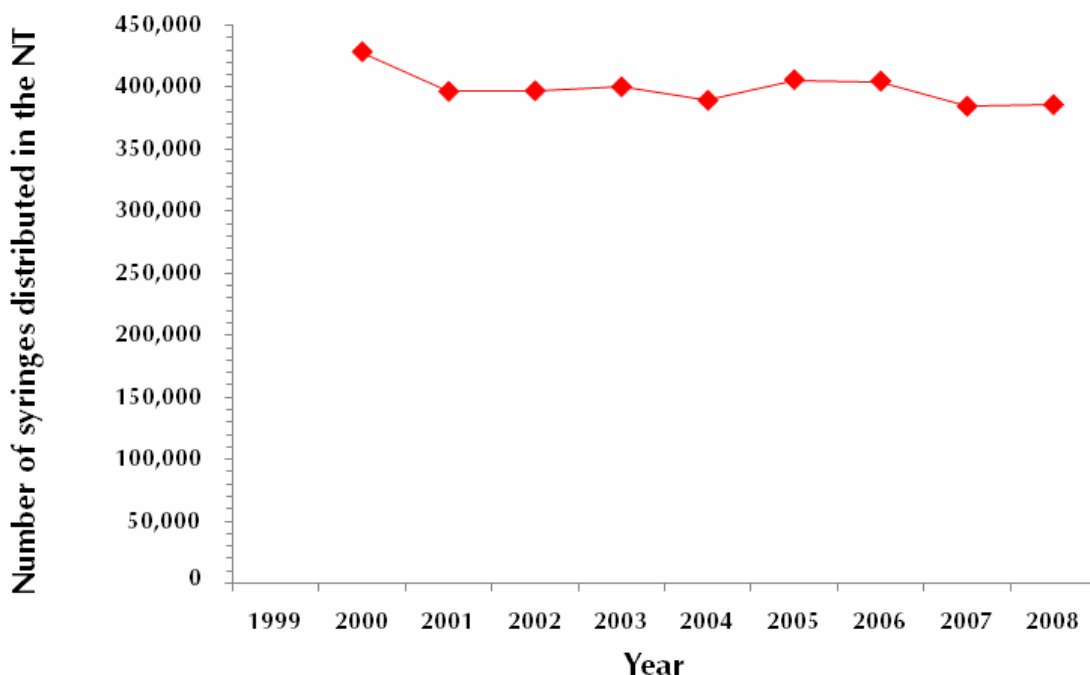


Overview

Needle and Syringe Programs have been operating in the Northern Territory since 1989, when the Northern Territory AIDS Council and the AIDS Council of Central Australia were established. Distribution through pharmacies commenced in Darwin in 1991. The majority of needles and syringes disseminated through NSPs in the Northern Territory are through primary outlets in Darwin and Alice Springs. Pharmacies sell ‘fit kits’ on a commercial basis. In the Northern Territory there are three primary outlets and 23 secondary outlets as well as pharmacies that distribute needles and syringes.

Number of NSPs:	26 (plus pharmacies)
Syringes distributed 1999-2008:	3,822,862
Average syringes per year:	382,286
Total spending 2007/8:	\$580,637

Figure 34: Number of needles and syringes distributed in the Northern Territory (1999-2008)



The number of IDUs in the Northern Territory is relatively small compared to other jurisdictions and has remained steady over the last decade. The number of needles and syringes distributed through NSPs in the Northern Territory has remained stable (Figure 34). The average frequency of injecting by IDUs in the Northern Territory has slightly decreased and sharing rates have also decreased (in contrast to most other jurisdictions). The prevalence of HCV has remained relatively steady and HIV cases are rare among IDUs in the Northern Territory.

In 2007/8, 378,856 sterile injection equipment units were provided in the Northern Territory: 10% were provided through secondary sites, including four hospital emergency departments, and 5-8% were distributed through pharmacies. Pharmacies charge an average of \$5-\$8 per five-pack out-of-pocket costs. The number of NSP sites in the Northern Territory is listed in Table 20. Table 21 reports the spending by financial year in 2008 dollars, unadjusted and adjusted for the consumer price index (CPI). Figures were not available before 2003/4 so the amounts prior to this assume similar levels of spending on primary services. Please note that all funding for sterile injecting equipment includes disposal equipment. Funding for the two are not separated in funds given to NSPs.

Table 20: Number of NSP sites in the Northern Territory

	Primary	Secondary
2007	3	23
2006	3	23
2005	3	22
2004	3	21
2003	2	21
2002	2	21
2001	2	21
2000	2	21

Table 21: Summary of expenditure on NSPs in Northern Territory (2000/1-2007/8)

	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8
Consumables (\$'000)								
Sterile injecting equipment	61	56	62	74	74	74	74	110
Disposal equipment	0	0	0	0	0	0	0	0
Safe sex packs	0	0	0	0	0	0	0	0
sub-total	61	56	62	74	74	74	74	110
NSP SUPPORT (\$'000)								
Primary NSPs Operations	277	330	328	357	399	514	432	450
Support for Secondary NSPs	0	0	0	0	0	0	0	0
Transport	0	0	0	0	0	0	0	0
Vending machines	0	0	0	0	0	0	0	0
sub-total	277	323	328	357	399	514	432	450
TOTAL (\$'000) (unadjusted for CPI)	334	386	390	431	473	588	506	560
TOTAL in 2008 (\$'000) (CPI adjusted)	383	437	442	489	536	648	540	581

Evaluating current NSPs

The epidemiological transmission model for HIV and HCV was applied to IDUs and NSPs specifically in the Northern Territory. The model was used to evaluate current NSPs versus no program and to project likely epidemiological impacts of potential changes to the program. The model estimated the expected number of HIV and HCV cases in the Northern Territory with and without NSP distribution of sterile injecting equipment (Figure 35). The estimated number of infections averted is presented in Figure 36. Less than one HIV infection would be expected due to syringe sharing by IDUs, on average, in the Northern Territory even without NSPs. Thus, NSPs are currently not preventing HIV infections in the Northern Territory. However, NSPs are very effective in averting HCV transmissions. It is estimated that over the last ten years they have averted 483 (458-522, IQR) new HCV infections.

Figure 35: Estimated HIV and HCV incidence in the Northern Territory with and without NSPs

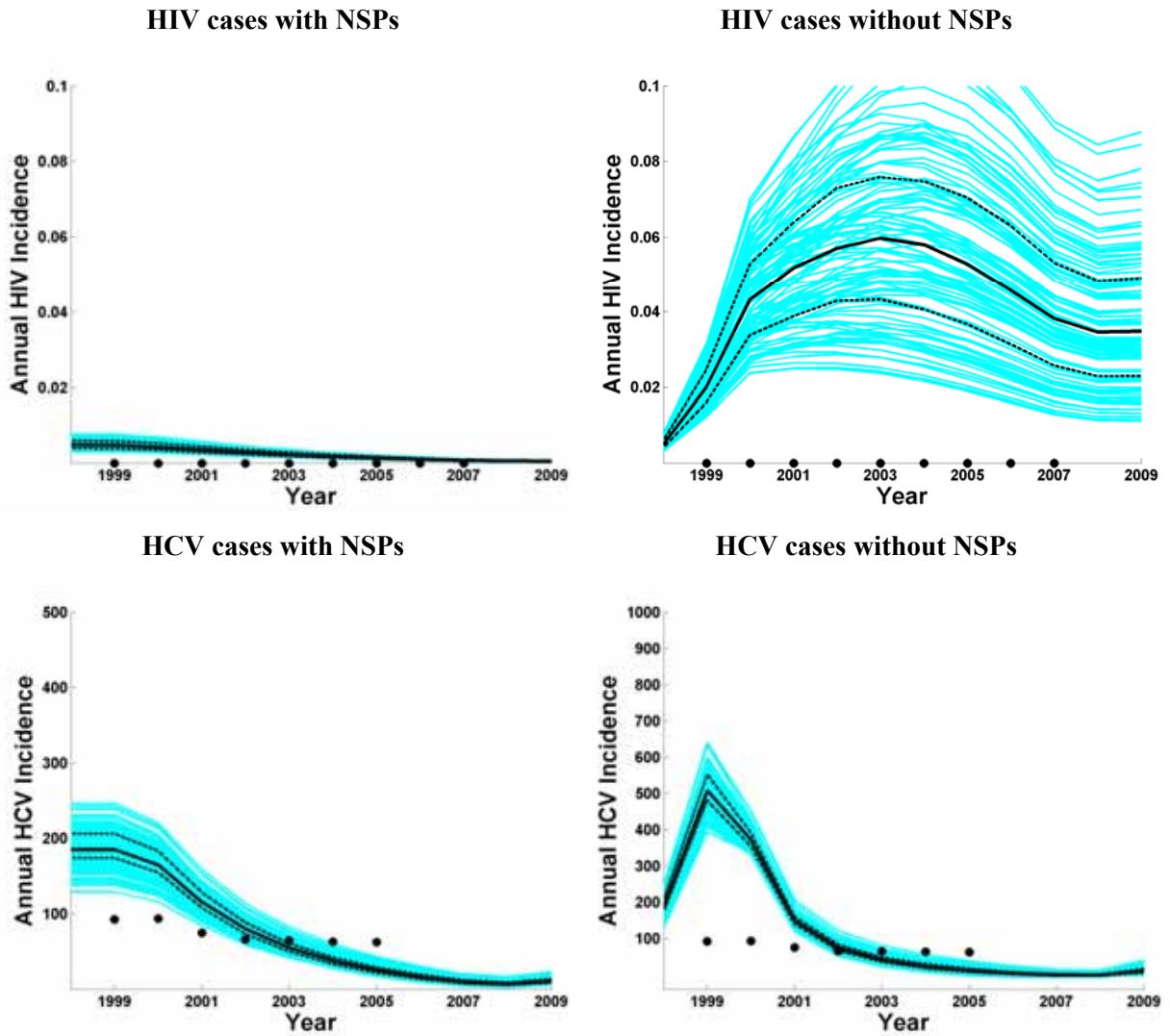
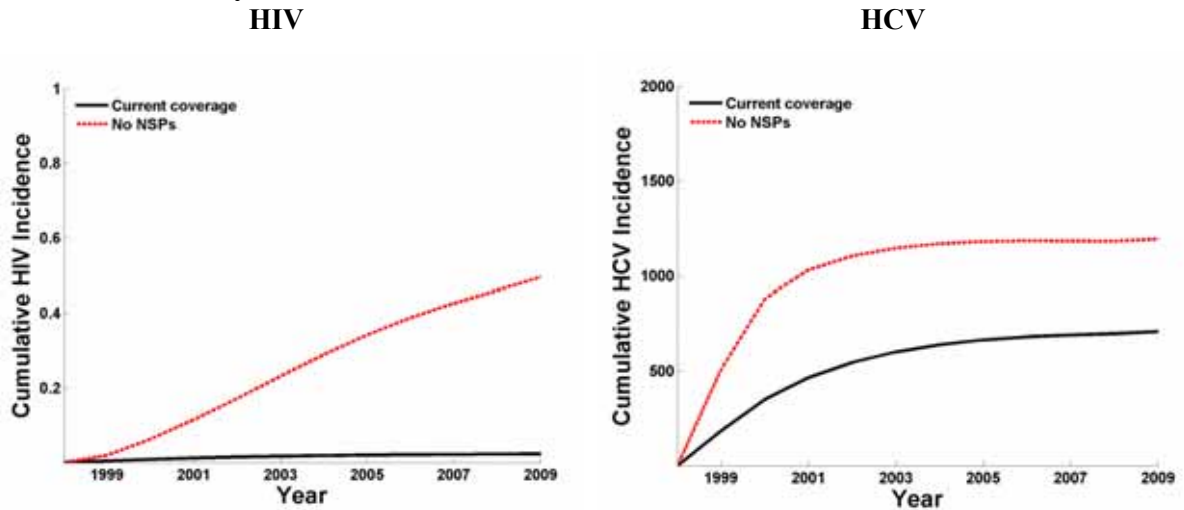


Figure 36: Estimated cumulative number of HIV and HCV cases averted in the Northern Territory due to NSPs



Epidemic projections in the Northern Territory

The NT model was used to calculate projections of the expected number of HIV and HCV cases in the future, according to scenarios whereby current syringe distribution levels are maintained or if there are increases or decreases in the provision of syringes through Northern Territory NSPs.

Figure 37: Projections of the expected number of HIV cases in the Northern Territory according to different syringe distribution levels

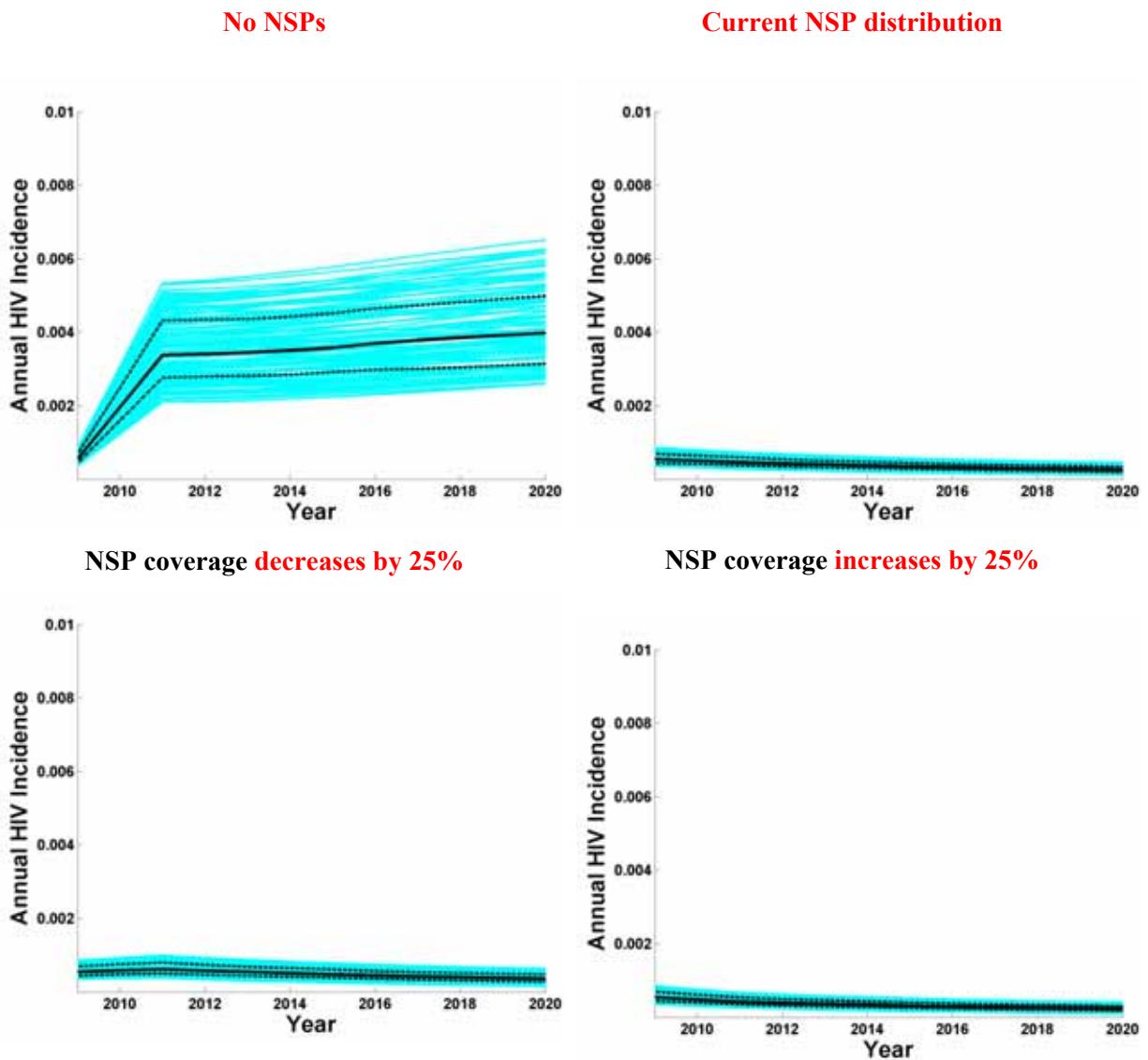
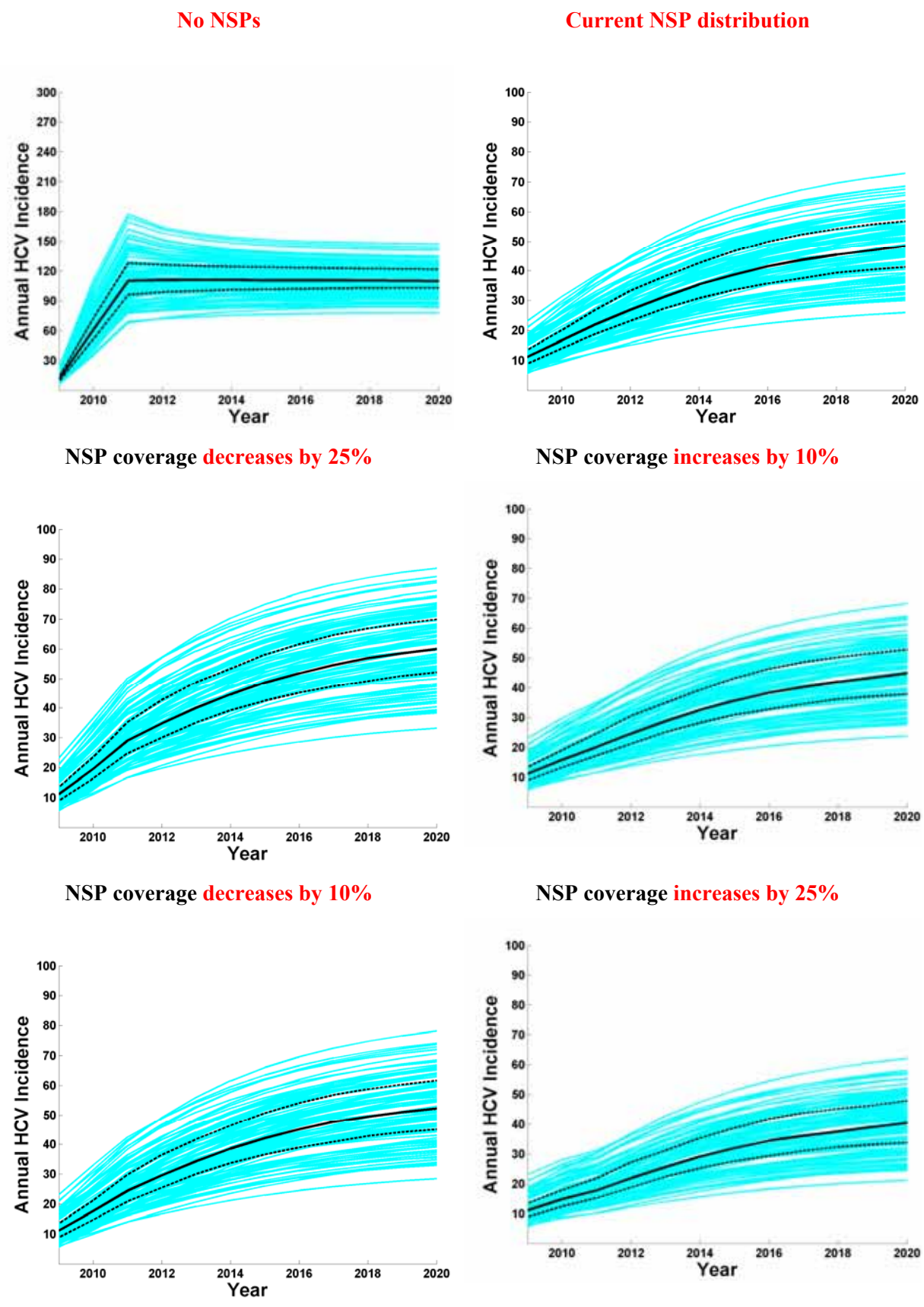


Figure 38: Projections of the expected number of HCV cases in the Northern Territory according to different syringe distribution levels



Economic evaluation of NSPs in the Northern Territory

The spending of \$5.2m in the funding of NSPs in Northern Territory from year 2000-2009 has resulted in a saving of \$4.2m in healthcare costs, with more than 835 Disability Adjusted Life Years with a net financial cost of \$999,000, a cost of just over \$1,000 per DALY gained. A summary of the return on investment of NSP funding in the NT is shown in Table 22. The mathematical and economic modelling estimated that if NSPs are continued at the same level of funding in the Northern Territory for the next ten years, \$329,000 of net financial savings will accrue (\$199,139 discounted at 3%) and for twenty years \$3.8m (\$2.4m discounted at 3%). The lifetime net present value of investment in NSPs that took account of all healthcare costs and savings (but not costs associated with productivity losses) would be \$32m (\$11.4m discounted at 3%).

Table 22: Return on Investment of NSP funding in the Northern Territory (2000-2009)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Healthcare costs saved \$m (IQR)	0.66 (0.59- 0.72)	0.45 (0.40- 0.53)	0.42 (0.37- 0.48)	0.40 (0.36- 0.46)	0.39 (0.34- 0.44)	0.37 (0.33- 0.42)	0.36 (0.32- 0.41)	0.36 (0.32- 0.40)	0.39 (0.35- 0.44)	0.44 (0.39- 0.48)
NSP funding \$m (median)	0.38	0.44	0.44	0.49	0.54	0.65	0.54	0.58	0.58	0.58
Net cost savings \$m (median)	0.28	0.01	-0.02	-0.09	-0.15	-0.28	-0.18	-0.22	-0.20	-0.14
DALY gain (median)	102	103	98	92	85	80	74	70	66	65

Please note that any inconsistencies between the figures presented in the above text and table are due to rounding. Additionally, the results for each jurisdiction are provided to assist in assessment of local return on investment. The small numbers in some jurisdictions may distort parameter uncertainties and should not be used to compare one jurisdiction with another.