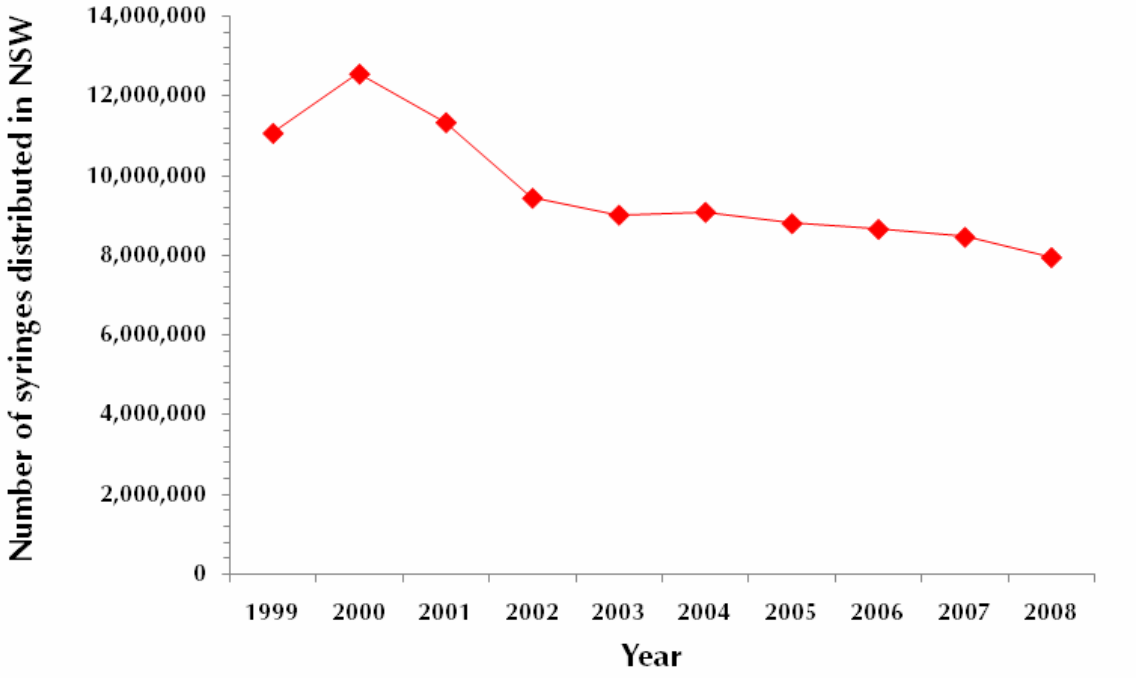
Epidemiological and economic evaluation of NSPs in New South Wales

Overview

Needle and Syringe Programs were piloted in New South Wales in 1986. In 1988, NSPs were rolled out across the state on an expanded pilot basis, with focus on access, education, consumer involvement and the free supply and exchange of equipment. New South Wales now has a relatively large number of all types of NSPs: 33 primary outlets, 295 secondary outlets, 385 community pharmacy outlets and 101 vending machines, as well as numerous outreach services. Within each of the eight Area Health Services, there is usually at least one primary outlet, often incorporating an outreach component, and a range of secondary outlets.

Number of NSPs:	814 (plus pharmacies)
Syringes distributed 1999-2008:	96,509,189
Average syringes per year:	9,650,919
Total spending 2007/8:	$9,671,362

Figure 29: Number of needles and syringes distributed in New South Wales (1999-2008)



The number of IDUs in New South Wales has decreased over the last decade. Similarly, the number of needles and syringes distributed has decreased. The average frequency of injecting by IDUs in New South Wales has decreased significantly and sharing rates have slightly decreased. The prevalence of HCV has remained relatively steady and the incidence of HIV has slightly decreased and remained low.

In 2007/8, 8,289,886 sterile injection equipment units were provided in New South Wales, with 1,576,078 provided through pharmacies and 998,110 through automated dispensing machines. Vending machines cost between $2,000 and $10,000 a year to purchase and are filled by local Area Health Service staff. Pharmacists charge out-of-pocket costs of an average of $3.50 per five-pack. All NSPs, including pharmacies, operating as part of the Pharmacy Fitpack Scheme, have disposal facilities provided as part of the program. Specific funding has contributed to the operations of the Workforce Development Program and the Needle Clean Up Hotline for several years, but has been included in Table 17 in 2007/08 only as $50,000 and $30,000 respectively. The number of NSP sites in New South Wales is listed in Table 17. Table 18 reports the expenditure by financial year in 2008 dollars, unadjusted and adjusted for the consumer price index (CPI). Table 18 includes extra specific funding in 2007/8 for the workforce development at $50,000 per year and $30,000 per year on a needle clean-up hotline.

Table 17: Number of NSP sites in New South Wales

	Primary	Secondary	Pharmacies	Vending machine sites
2007/8	33	295	385	101
2006/7	33	270	445	100

Table 18: Summary of expenditure on NSPs in New South Wales (2000/1-2007/8). Actual data only available for 2006/7 and 2007/8, previous years imputed.

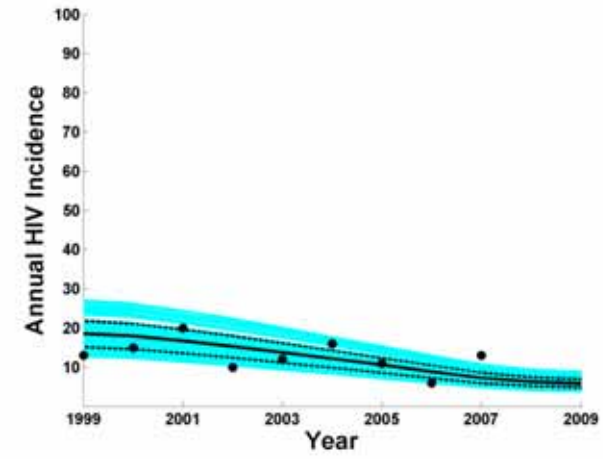
Consumables ($'000)	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8
Sterile injecting equipment	2,047	1,899	2,072	2,484	2,623	2,455	2,829	2,298
Disposal equipment	199	184	201	242	256	239	306	313
Safe sex packs	0	0	0	0	194	181	209	218
sub-total	**2,246**	**2,073**	**2,274**	**2,726**	**3,073**	**2,876**	**3,344**	**2,830**
NSP SUPPORT ($'000)								
Primary NSPs Operations	3,265	3,888	3,870	4,214	4,704	4,622	5,530	6,210
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	129	288
sub-total	**3,265**	**3,888**	**3,870**	**4,214**	**4,704**	**4,622**	**5,659**	**6,498**
TOTAL ($'000) (unadjusted for CPI)	**5,511**	**5,961**	**6,144**	**6,939**	**7,777**	**7,498**	**9,003**	**9,328**
TOTAL in 2008 ($'000) (CPI adjusted)	**5,883**	**6,363**	**6,558**	**7,408**	**8,302**	**8,004**	**9,611**	**9,671**

Evaluating current NSPs

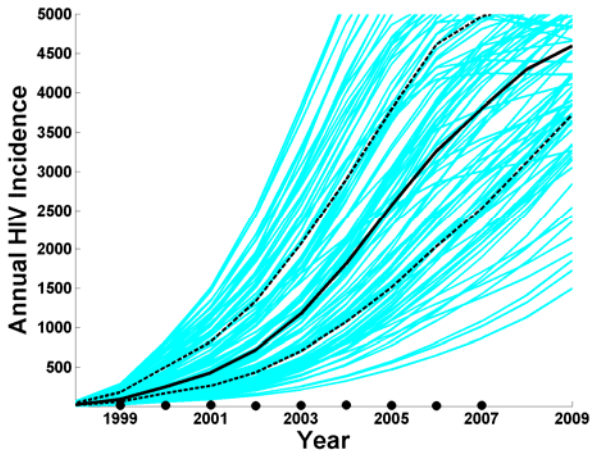
The mathematical epidemiological transmission model for HIV and HCV was applied to IDUs and NSPs specifically in the New South Wales. The model was used to evaluate current NSPs versus no program and to project likely epidemiological impacts of potential changes to the program. The model estimated the expected number of HIV and HCV cases in the New South Wales with and without NSP distribution of sterile injecting equipment (Figure 30). The estimated number of infections averted is presented in Figure 31. An estimated 23,324 (15,392-30,819, IQR) HIV infections and 31,953 (31,096-33,657, IQR) HCV infections were averted due to NSPs in New South Wales.

Figure 30: Estimated HIV and HCV incidence in New South Wales with and without NSPs

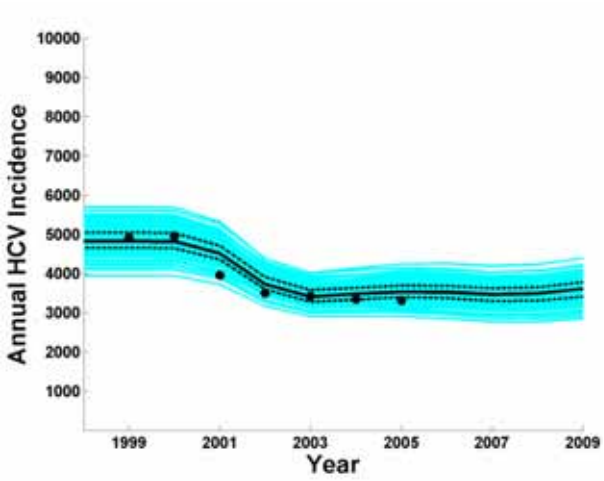
HIV cases with NSPs



HIV cases without NSPs



HCV cases with NSPs



HCV cases without NSPs

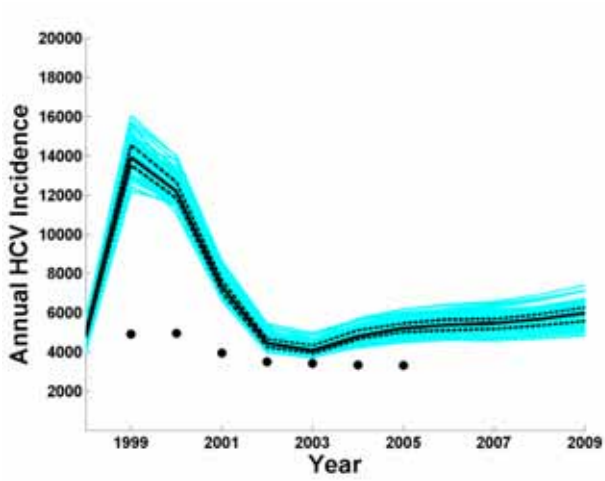
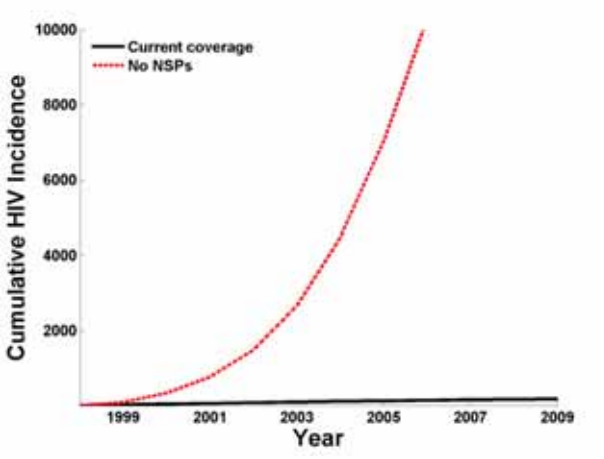
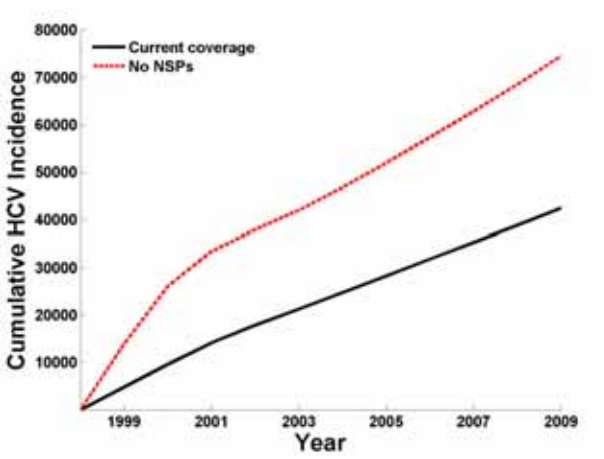


Figure 31: Estimated cumulative number of HIV and HCV cases averted in New South Wales due to NSPs

HIV



HCV



Epidemic projections in New South Wales

The New South Wales 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 New South Wales NSPs.

Figure 32: Projections of the expected number of HIV cases in New South Wales according to different syringe distribution levels

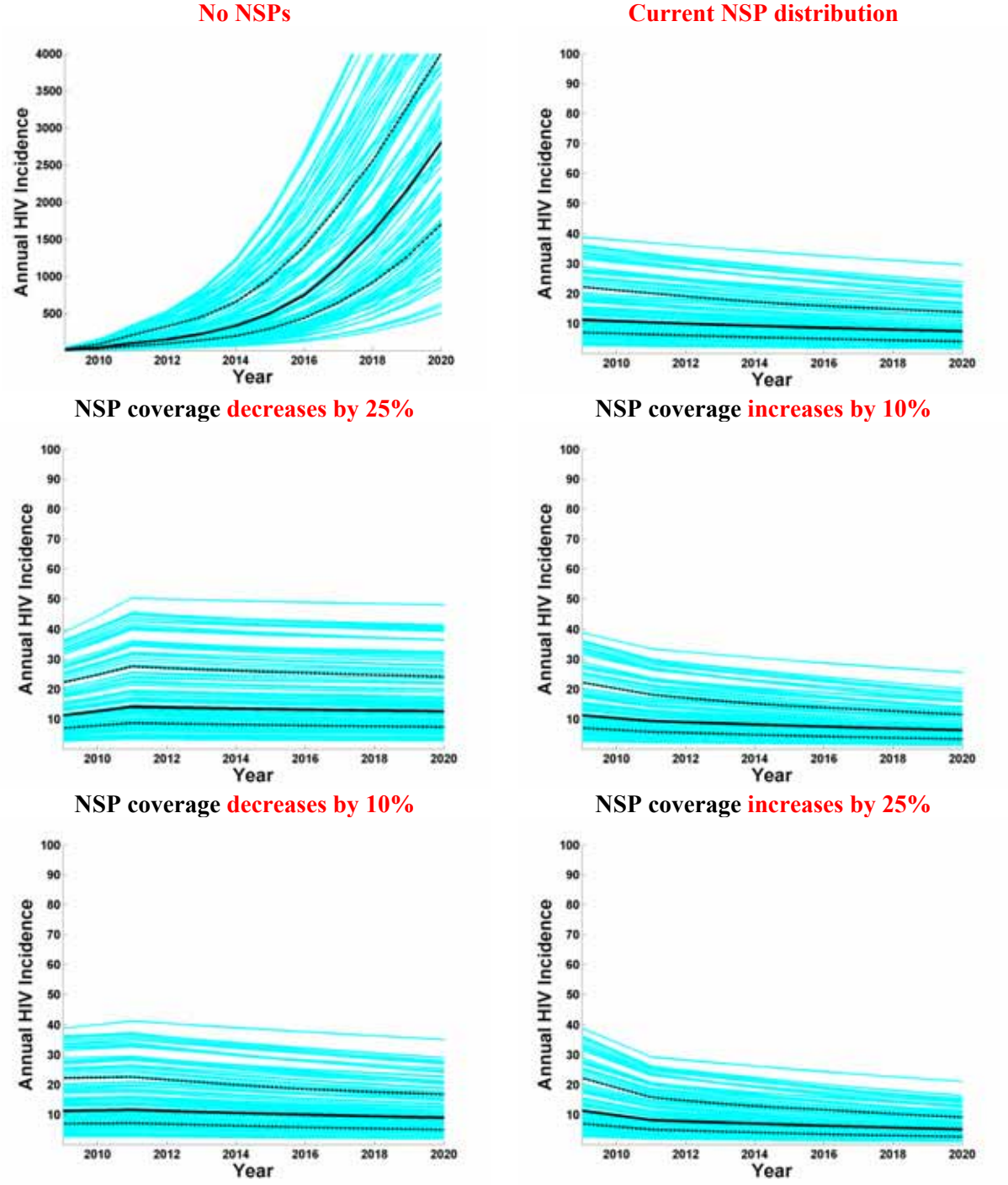
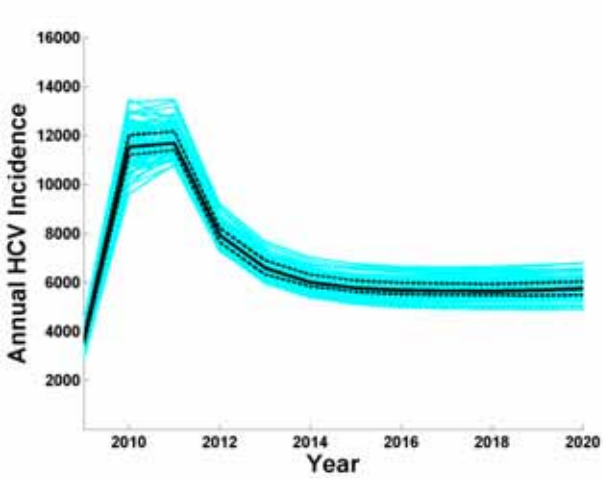
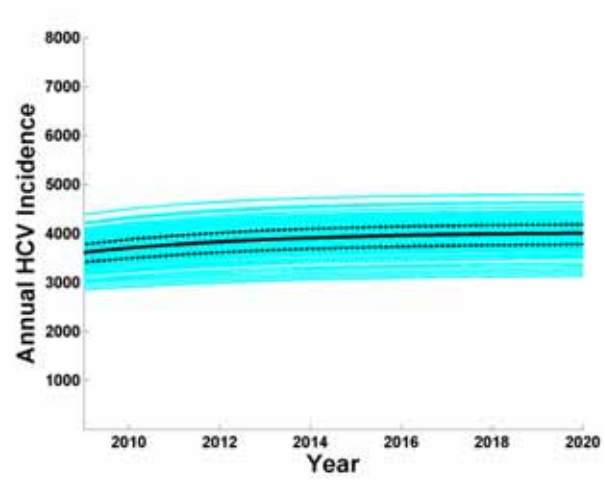


Figure 33: Projections of the expected number of HCV cases in New South Wales according to different syringe distribution levels

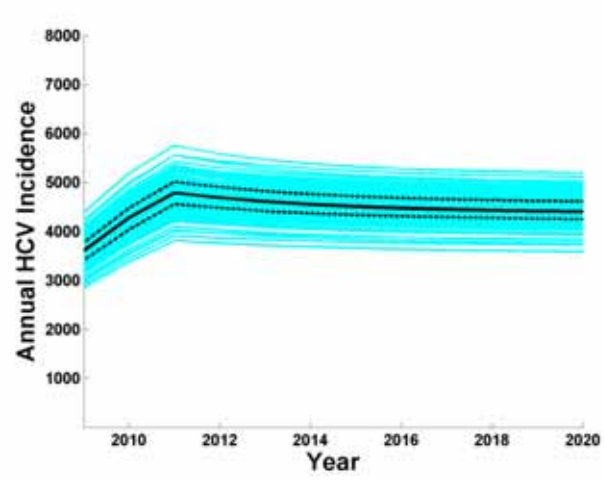
No NSPs



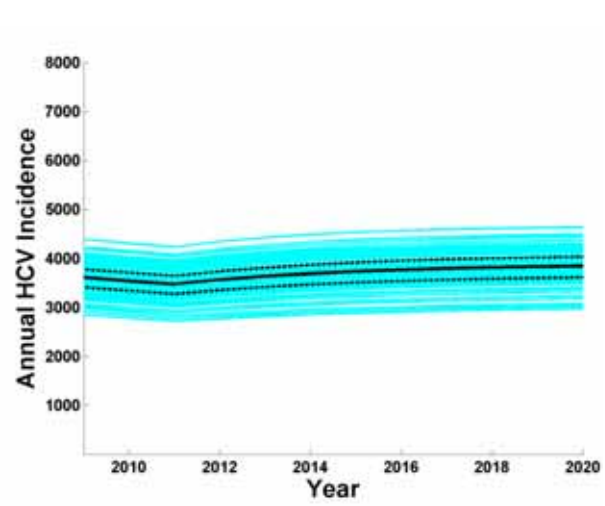
Current NSP distribution



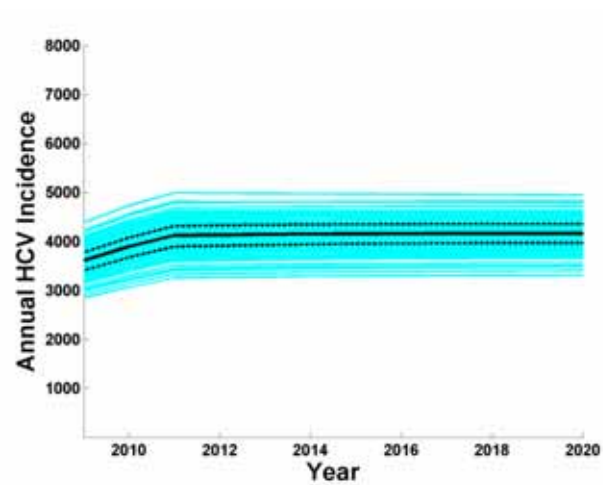
NSP coverage decreases by 25%



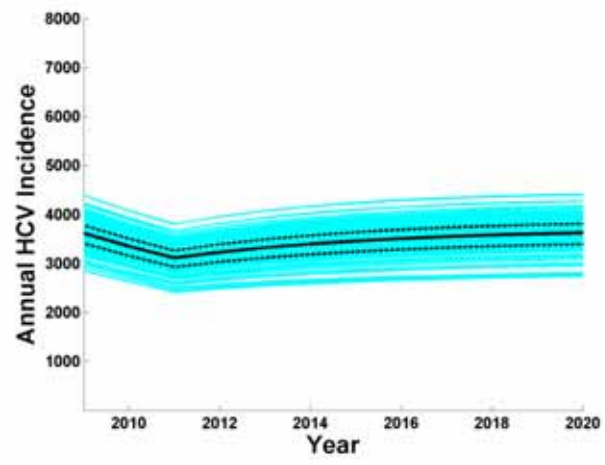
NSP coverage increases by 10%



NSP coverage decreases by 10%



NSP coverage increases by 25%



Economic evaluation of NSPs in New South Wales

The spending of $81m in the funding of NSPs in New South Wales from year 2000-2009 has resulted in a saving of $513m in healthcare costs, with more than 72,000 Disability Adjusted Life Years gained with a net financial saving of $432m. A summary of the return on investment of NSP funding in the New South Wales is shown in Table 19. The mathematical and economic modelling estimated that if NSPs are continued at the same level of funding in New South Wales for the next ten years, $1.55bn of net financial savings will accrue ($1.35bn discounted at 3%) and for twenty years $3.87bn ($2.83bn 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 $21.23bn ($7.53bn discounted at 3%).

Table 19: Return on Investment of NSP funding in New South Wales (2000-2009)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Healthcare costs saved $m (IQR)	27 (24-30)	23 (21-28)	28 (24-33)	34 (28-42)	41 (33-53)	48 (40-64)	58 (46-76)	71 (55-90)	84 (65-104)	98 (74-117)
Funding for NSPs $m (median)	6	6	7	7	8	8	10	10	10	10
Net cost savings $m (median)	21	17	21	26	32	40	49	61	75	89
DALY gain (median)	3,715	4,205	4,683	5,377	6,172	7,369	8,849	10,559	12,582	14,857

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.