1 INTRODUCTION

1.1 BACKGROUND

In 2000, the Department of Health and Ageing engaged Health Outcomes International Pty Ltd (HOI) in association with the National Centre for HIV Epidemiology and Clinical Research (NCHECR) to undertake a study into the economic effectiveness (or return on investment) of needle and syringe programs (NSPs) in Australia.

The study updates and expands a study previously undertaken by Hurley, Jolley and Kaldor which investigated the effectiveness and cost effectiveness of needle and syringe programs in relation to HIV/AIDS (see 'The effectiveness and cost-effectiveness of needle and syringe exchange programs' in *An Economic Evaluation of Aspects of the Australian HIV/AIDS Strategie*s, Technical Appendix 2 to *Valuing the past…investing in the future - Evaluation of the National HIV/AIDS Strategy 1993-94 to 1995-96)*.

This report is a joint production of Health Outcomes International Pty Ltd and the National Centre for HIV Epidemiology and Clinical Research (NCHECR) with support from Professor Michael Drummond, Centre of Health Economics, York University, UK.

1.2 OBJECTIVES

The study seeks to analyse the effectiveness of needle and syringe programs in preventing transmission of HIV, hepatitis C (HCV) and hepatitis B (HBV) in Australia from 1991 (that is from when NSPs were well established in all jurisdictions except Tasmania) to the most recent possible period. The study then uses these findings to calculate the return on investment from NSPs from 1991 to the present.

Specifically the aims of the study were to:

- ☐ Estimate the effectiveness of NSPs in relation to preventing transmission of HIV as well as hepatitis B and C;
- ☐ Calculate the return on investment in NSPs from 1991 to the present; and
- ☐ Provide contemporary research on the effectiveness and efficiency of the NSPs in order to assist stakeholders and governments to demonstrate the role of NSPs as a core population health activity, and to support further investment in NSPs if necessary.

For several reasons the project examined effectiveness in relation to prevention of HIV and hepatitis C, but not hepatitis B. First, epidemiological data were more readily accessible for HIV and hepatitis C, in particular in the Australian setting. For example, the NSP survey that is conducted each year tests injecting drug users for HIV and hepatitis C, but as yet does not include hepatitis B testing. Second, the vast majority (possibly greater than 95%) of injecting drug users exposed to hepatitis B do not develop chronic infection, and are therefore not at risk of major hepatitis B-related morbidity and mortality. Third, there is greater uncertainty in relation to the natural history of chronic hepatitis B.

The introduction of NSPs may have reduced incidence of hepatitis B among injecting drug users in Australia, particularly as uptake of hepatitis B vaccination is not optimal. However, it is felt that the cost savings through hepatitis B prevention would have been considerably lower than for either HIV or hepatitis C. The exclusion of hepatitis B from the analysis therefore represents a conservative approach, and may underestimate, to some extent, the total costs of treatment avoided.

1.3 METHODOLOGY

The study comprised two discrete stages. The first related to the development of an agreed methodology that examined the evidence base available to support the study, and from that evidence, to develop an approach that maximised the use of available data. This stage comprised three components:

- An international literature review that examined national and international research of relevance to the study. The review identified a body of evidence that could inform the project, promote development in specific areas and encourage debate among stakeholders on issues of interest. The literature review did not seek to examine the findings of the literature, but rather to simply identify whether or not there is a sufficient body of evidence available to support a study of this type. Particular topics of interest explored included: evaluations (economic and other) of NSPs internationally; studies into the incidence and prevalence of HIV, HBV and HCV; and quality of life studies for patients with chronic illnesses (particularly HIV and HCV).
- Consultations with Commonwealth, State and Territory representatives were undertaken to develop a profile of NSPs across Australia, and to determine the range, nature and duration of operational data (activity and costs) within each jurisdiction to be used in the study.
- Following the above, a methodology for the study was developed and provided to the study Advisory Committee for consideration and comment.

The second stage of the study was the implementation of the approved methodology, the outcomes of which are presented in this report. The key components of the methodology were:

- An ecological study of the effect of NSPs on HIV and HCV, based on the international literature together with a range of related information and data from within Australia.
- Collection of data on the costs of operating NSPs in all Australian jurisdictions.
- Collection of data on the lifetime costs of treatment of HIV and HCV in the current clinical environment.
- Determination of Quality of Life (QoL) values for persons with HIV and HCV.
- Development and application of an economic model to evaluate the return on investment in NSPs.
- Determination of the quality of life impacts of NSPs on HIV and HCV.
- Preparation of draft and final reports presenting our findings.

In applying the findings of the impact of NSPs on HIV and HCV in Australia, we have assumed that NSPs have had no effect on the size of the injecting drug user population (i.e. that NSPs do not increase drug use). Whilst acknowledging the debate that exists on this subject, the available evidence from Australia and overseas has not demonstrated that NSPs have resulted in an increase in drug use, and hence our assumption is reasonable (See Guydish et al (1993), Watters et al (1994), Wolk et al (1990) and Schoenbaum et al (1996)).

1.4 ACKNOWLEDGEMENT

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