

# THE COST-EFFECTIVENESS OF NEEDLE AND SYRINGE PROVISION IN PREVENTING TRANSMISSION OF HEPATITIS C VIRUS IN PEOPLE WHO INJECT DRUGS

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## **Background:**

Over 80% of Hepatitis C virus (HCV) infections in the UK are acquired through injecting drug use. This study investigated the cost-effectiveness of current levels of high coverage needle and syringe provision (HCNSP defined as a clean needle for every injection) compared to a counterfactual scenario of no provision of needle and syringe programmes (NSP) for 10 years among people who inject drugs in 3 UK settings with differing chronic prevalence: Bristol (45%), Walsall (24%) and Dundee (38%).

## **Methods:**

A HCV transmission model was parameterised and calibrated with UK and Australian estimates for the effect of HCNSP on HCV acquisition risk and city specific data. The model estimated the increase in incident infections and disease related deaths from 2016 to 2066 if reduced transmission risk of HCNSP was removed for 10 years compared to the status quo scenario (HCNSP coverage Bristol 56%, Walsall 28%, Dundee 49%). Primary cost data for city specific NSP was used to perform a cost-effectiveness analysis with a 50 year time horizon and £20000 per quality adjusted life year (QALY) threshold for the incremental cost-effectiveness ratio (ICER).

## **Results:**

Removing NSP for 10 years increased the number of incident infections over a 50-year time horizon in line with the prevalence of HCV and HCNSP coverage in each city (Bristol 200, Walsall 93, Dundee 749). The mean ICER was cost saving in Dundee and Bristol, and £600 per QALY in Walsall. These results were robust to univariate sensitivity analyses undertaken including time horizon, HCV treatment cost and discount rate.

## **Discussion:**

Despite variations in coverage, NSP are preventing considerable HCV infections in the UK. NSP are highly likely to be cost effective at the £20000 per QALY threshold with some settings cost saving. Removing NSP is likely to lead to drastically increased healthcare costs over the long term.