

Needle and syringe programmes cost-effectively prevent hepatitis C transmission

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Electron micrographs of hepatitis C virus purified from cell culture. Scale bar is 50 nanometers. Credit: Center for the Study of Hepatitis C, The Rockefeller University.

Providing clean injecting equipment through needle and syringe programmes is a highly cost-effective way of preventing hepatitis C (HCV) transmission among people who inject drugs and could save millions of pounds in infection treatment costs in the UK, according to

research led by the University of Bristol and London School of Hygiene & Tropical Medicine.

Hepatitis C is a blood-borne virus that can seriously damage the liver and cause death if left untreated. Over 200,000 people are infected with HCV in the UK and over 90% of new infections are acquired through injecting drugs. Needle and [syringe](#) programmes provide sterile injecting equipment and other prevention and support services. In the UK, they are delivered through pharmacies, mobile vans and specialist agencies.

The research, funded by the National Institute for Health Research (NIHR) and published in the journal *Addiction* today, is the first study to evaluate the cost-effectiveness of [needle](#) and syringe programmes in Western Europe.

Using data from three cities with different levels of HCV infection among people who inject drugs—Bristol (45%), Dundee (26%) and Walsall (18%) - the researchers estimated the costs of existing needle and syringe programmes in each city, used mathematical models to estimate their impact on the spread of HCV infection, then estimated the cost-effectiveness of the programmes in each city. They projected how the spread of HCV would increase if all needle and syringe programmes were stopped for the first 10 years of a 50-year time period (2016-2065).

In all three areas, current needle and syringe programmes resulted in lower healthcare and treatment costs compared to if the programmes were stopped. There were estimated cost-savings of £159,712 in Bristol and £2.5 million in Dundee.

There were also projected reductions in the number of HCV infections—by 8% in Bristol and Walsall and 40% in Dundee between 2016 and 2065—and improvements in the [quality of life](#) among people

who inject drugs. Gains in quality adjusted life years (QALYs), a measure of life years saved and their quality of life, were 502 in Bristol, 195 in Dundee and 192 in Walsall.

The researchers also found that needle and syringe programmes would continue to be cost-effective if HCV treatment rates increased or treatment costs reduced, because of their effectiveness in preventing re-infection.

Dr. Zoe Ward, from the NIHR Health Protection Research Unit in Evaluation of Interventions at the University of Bristol and co-lead author of the study, said: "We have evaluated the impact and cost-effectiveness of needle and syringe programmes in the UK for the first time. The results are clear. Needle and syringe programmes not only reduce the number of new HCV infections among people who inject drugs and improve their quality of life, they are also low-cost, excellent value for money and, in some areas, save money, which is good news for our cash-strapped [local authorities](#). We hope that Public Health England and local government commissioners and [policy makers](#) will take note and continue to commission needle and syringe programmes, which are currently under threat of funding cuts."

In a related study from the same project, the researchers found that opioid substitution therapy, such as methadone, halved the risk of acquiring HCV infection among people who inject drugs, and combining opioid substitution therapy with high-coverage needle and syringe provision (providing at least one sterile needle for each injection), led to a 74% reduction in risk.

Sedona Sweeney, from the London School of Hygiene & Tropical Medicine, who led the economic evaluation, said: "Access to this type of data can be so important in helping policy makers make tough decisions about how to invest in public services. Our results very clearly indicate

that needle and syringe programmes are likely to be a strong investment choice—not only in the UK but also other parts of the world where there are similar levels of hepatitis C infection among people who inject drugs.

"It is imperative that countries follow the recommendations of the World Health Organization by scaling up provision of needle and syringe programmes and opioid substitution therapy. Our findings provide important new evidence to demonstrate that not only could this lead to fewer people being infected with this potentially life-changing virus, but could also save money for other local services, which means better health and social care for everyone."

More information: Evaluating the cost-effectiveness of existing needle and syringe programmes in preventing hepatitis C transmission in people who inject drugs. Sedona Sweeney and Zoe Ward et al in *Addiction*

Impact of current and scaled-up levels of hepatitis C prevention and treatment interventions for people who inject drugs in three UK settings - what is required to achieve the WHO's HCV elimination targets? Zoe Ward et al. *Addiction* (May 2018)

Needle syringe programmes and opioid substitution therapy for preventing hepatitis C transmission in people who inject drugs. Lucy Platt et al in *Cochrane Database of Systematic Reviews* (September 2017)

Provided by University of Bristol

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