

## THE EFFECTIVENESS OF LOW DEAD SPACE SYRINGES FOR REDUCING THE RISK OF HEPATITIS C VIRUS ACQUISITION AMONG PEOPLE WHO INJECT DRUGS - FINDINGS FROM A NATIONAL SURVEY IN ENGLAND, WALES, AND NORTHERN IRELAND

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**Background:** Syringes with attached needles (termed fixed low dead space syringes [LDSS]) retain less blood following injection than traditional syringes with detachable needles (termed high dead space syringes [HDSS]). The World Health Organization recommends LDSS provision for reducing blood borne virus transmission among people who inject drugs (PWID), however, empirical evidence supporting this recommendation is lacking.

**Methods:** The UK Unlinked Anonymous Monitoring cross-sectional bio-behavioural survey surveys PWID attending harm reduction services. The 2016, 2018, and 2019 surveys tested for hepatitis C virus (HCV) RNA amongst HCV antibody-negative (marker of recent HCV infection) PWID and included questions on the percentage of syringes used in the past month with attached needles (fixed LDSS) or detachable needles (HDSS or detachable LDSS). Using multivariable logistic regression, we investigated whether always using fixed LDSS (versus any use of syringes with detachable needles) was associated with recent HCV infection amongst antibody-negative PWID that reported injecting last month.

**Results:** Of 1,429 included participants, 64.1% always used fixed LDSS, 25.2% always used syringes with detachable needles, and 10.7% used both. There were 33 recent HCV infections. Compared to any use of syringes with detachable needles, always using fixed LDSS was associated with lower likelihood of recent HCV infection in unadjusted (odds ratio [OR] 0.32, 95% confidence interval 0.14-0.74) and adjusted analyses (adjusted OR 0.24, 0.08-0.67).

**Conclusion:** Exclusive use of fixed LDSS was associated with a 76% reduced risk of recent HCV acquisition amongst PWID. This suggests that the use of LDSS could be highly protective against HCV, suggesting that strategies to eliminate HCV (and HIV) should expand the use of LDSS.

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