

Sharing of needles, syringes and injecting equipment: Risk of HCV transmission and prevention potential.

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Background: Needles, syringes and other equipment used to inject drugs can become contaminated and harbor HCV for days or weeks.

Methods: Systematic and realist synthesis of the literature describing syringe and equipment sharing and its relation to HCV infection events, with meta-analysis, estimation of the proportion of infections that are attributable to different injection practices, and examination of the influence of HCV prevalence, prevention strategies and other individual, network and contextual factors.

Results: Syringe and equipment sharing each increase the risk of HCV infection approximately 2-fold, and the risk increases as HCV prevalence rises. The proportion of HCV infections attributable to equipment sharing is typically higher (20-60%) than for syringe sharing (2-40%) because in most settings a greater proportion of PWID share equipment vs. syringes. A complex system of individual, contextual and social network factors influence injection behaviors. Syringe and equipment access programs can increase safe injections but protect against HCV transmission only when individual PWID maintain a very high level of engagement. Safe injection facilities reduce syringe and equipment sharing but are available on a very limited basis.

Conclusion: Even as access to HCV treatment improves for PWID, safe injection programs including syringe and equipment access and safe injection facilities will continue to be relevant and essential to prevent primary and re-infection and make progress toward eliminating HCV in PWID. New approaches are needed to expand the reach of effective safe injection interventions.