

# DRUG ALCOHOL FINDINGS *Research entry*

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## ▶ [Disinfection of syringes contaminated with hepatitis C virus by rinsing with household products.](#)

**Binka M., Paintsil E., Patel A. et al.**  
**Open Forum Infectious Diseases: 2015, 2(1).**

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*When fresh syringes and needles are unavailable, in laboratory tests rinsing with household bleach proved the most effective of the readily available ways to decontaminate equipment contaminated with the hepatitis C virus. Bleach also works with HIV. Multiple rinses with other cleaning products can also be effective.*

**SUMMARY** Hepatitis C virus transmission among people who inject drugs is caused by the sharing of injecting equipment. People who inject drugs often try to disinfect used syringes with household products when new syringes are unavailable. The featured study assessed the effectiveness of these products in disinfecting syringes contaminated with hepatitis C by testing for residual infectivity in syringes after rinsing.

For the study, 1ml insulin syringes with fixed needles and 1ml tuberculin syringes with detachable needles were contaminated with hepatitis C and then rinsed with water, Clorox bleach, hydrogen peroxide, ethanol, isopropanol, Lysol multi-surface cleaner or Dawn Ultra dishwashing liquid at different concentrations. Syringes were either immediately tested for viable virus or stored at 4°C, 22°C, and 37°C for up to 21 days before viral infectivity was determined.

Most of the products tested reduced infectivity to undetectable levels in the insulin syringes. Bleach eliminated infectivity in both types of syringes. In tuberculin syringes, after using other disinfectants the proportion of syringes which remained infected ranged from 77% after rinsing with 5% ethanol to 7% with a 1 in 800 solution of Dawn Ultra.

The conclusions were that the household disinfectants tested were more effective with low residual volume, fixed-needle syringes than with high residual volume syringes with detachable needles. Bleach was the most effective disinfectant after one rinse, whereas other diluted household products required multiple rinses to eliminate hepatitis C virus. Rinsing with water, 5% ethanol (as in beer), and 20% ethanol (as in fortified wine) was ineffective and should be avoided. This result is consistent with other studies that reported the effectiveness of bleach in eliminating residual HIV infectivity in contaminated syringes. As such, used properly, bleach may be the best disinfectant for decontaminating used syringes when new syringes are unavailable. However, injectors may choose not to rinse their syringes with bleach for a number of reasons, including the fact that multiple rinses with bleach damages syringes and needles. Findings suggest that hydrogen peroxide, rubbing alcohol, Lysol cleaner, and kitchen sink detergent may be suitable alternatives to bleach in high and low void volume syringes, if high concentrations are used and syringes are rinsed several times.

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