Validation of forensic cleaning processes undertaken within Sexual Assault Referral Centres

National validation of cleaning products and forensic cleaning processes used to clean forensic medical examination facilities within Sexual Assault Referral Centres (SARCs) and custody.

Key details

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Police region	North West
Level of research	PhD
Project start date	July 2024

Research context

This project examined the retrospective validation of long-established cleaning processes used within Sexual Assault Referral Centres (SARCs), for which there are variations between facilities in the detail of the cleaning approach that is applied, including whether bleach/hypochlorite cleaning reagents are permitted depending on local health and safety requirements. Six cleaning reagents commonly used within UK SARCs and Forensic Science Providers were assessed in this validation study:

- Chemgene HLD4H
- Virkon
- Microsol
- Selgiene

- Virusolve
- Presept (the only reagent containing bleach)

Additional comparison testing was also conducted on Chemgene Medlab. These were evaluated for their DNA decontamination capability by cleaning dried-on body fluid stains deposited on typical examination room surfaces and then assessing the level of DNA remaining (percentage yield). Impact of changing different cleaning parameters were assessed against an environmental indicator guide that provides insight into SARC facility cleanliness.

Differences in effectiveness of decontamination varied according to body fluid type with DNA in blood being most readily removed followed by saliva, and semen was the hardest to decontaminate. Likewise, different surfaces varied in their resilience to decontamination, with Formica being the easiest to clean and vinyl the hardest. Bleach-based reagent Presept gave the best decontamination test results overall, while non-bleach cleaners Virkon and Selgiene were also very effective. However, as a general rule, provided double spray/wipe cycles are performed using manufacturers' recommended concentrations and a 30 second contact time, the cleaning effectiveness of all reagents were assessed to be generally acceptable in most circumstances. The exception to this rule was cleaning dried semen on vinyl, which was the most challenging body fluid/surface combination to decontaminate. It is recommended that extra care is taken in cleaning vinyl surfaces such as the examination couch and consider additional measures if necessary.

Research methodology

The cleaning reagents tested were Virkon, Chemgene HLD4H, Microsol, Selgiene, Virusolve and Presept. This ensured that most of the cleaning reagents used by SARCs as identified in a survey were included in this study.

In total 579 tests were conducted in the 10 experiments in order to assess the impact of different aspects of cleaning and variables within the cleaning process.

Summary of findings

This project was completed in March 2025.

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