

Safety, Risks and Outcomes from the Use of Injecting Paraphernalia

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Injecting drug users who share the same equipment when preparing injections, including spoons, water, acids and filters (termed 'paraphernalia') may be at risk of contracting hepatitis C. An increasing number of needle exchange schemes have begun distributing paraphernalia since it became legal to do so in the UK (2003/5). However, paraphernalia are not medical devices so do not undergo licensing requirements before marketing, and lack of information on safety and performance makes it difficult for service providers to decide which items to supply. This study tested some common paraphernalia items in the lab to assess their theoretical impact and then looked at sharing and injecting problems amongst two groups of injectors, one with access to paraphernalia and one without. The views of these injectors on barriers to safer paraphernalia use and how to reduce sharing were also sought.

Main Findings

- Soap & water and 70% alcohol hand rub both significantly reduced the 'bugs' on injectors fingers, with hand rub being more convenient for those without access to clean water.
- Injectors who 'always or mostly' wiped their sites before injecting were less likely to have skin or soft tissue infections.
- Aluminium cookers leaked small amounts of aluminium into heroin injections made with acid, but it is not possible to say if this could cause long term harm. They were 'single use' as heat makes them fragile but commonly used in 'batch preparation'.
- Citric added in small amounts stepwise reduces excess acid in resulting injections. Compared to citric, larger quantities of Vitamin C were needed and typical injections were less acidic, however it is more expensive and could still irritate.
- Commercially made filters (Sterifilt and wheel filter) removed more particles from injections compared to makeshift filters e.g. cigarette filters. The Sterifilt held back very little drug whereas the wheel filter retained a lot.
- Injectors without access to paraphernalia reported statistically higher levels of sharing 'ever', but levels in the past month were not statistically higher. They also had more injecting site complications and infections but not significantly so.
- Injectors with access to paraphernalia still shared or used makeshift items in part because they did not have enough exchange equipment when needed. This is because they gave it away to others or didn't collect enough ahead of need.
- Injectors tended to see sharing paraphernalia as less risky than sharing needles, many did not explicitly express concern about Hepatitis C Virus (HCV) transmission.
- The lack of mass media focus on HCV compared to HIV was seen by interviewees as sending the message that HCV is less of a concern.
- Some advocated mass media campaigns to raise HCV awareness; others supported wider promotion of services and their confidentiality policies.

The project

The main aims of the project were to:

- test paraphernalia items and injection preparation methods in the laboratory to identify (from those tested) the items of paraphernalia and preparation methods that could present the least risk to health.
- conduct an investigation into the impact that paraphernalia supply is making on sharing and health in the practice setting and compare this with non-supply.

Part one: Lab tests

A controllable experimental method was developed that replicated the injection preparation practices of injectors based on the video data of Taylor et al (2004). Heroin was obtained from the police.

Hand washing study: 50 injectors pressed their fingers on a microbiology plate before and after washing their hands with either soap and water or 70% alcohol hand rub (randomly allocated). Bugs on both plates were grown and the difference in number of 'colonies' of bugs counted. Both methods of hand cleansing reduced the bug count significantly, with hand rub being better but not statistically so. Hand rub might be more convenient and could be used to clean injecting sites too instead of swabs.

Aluminium cooker tests: Aluminium single use cookers were tested to see if they leaked aluminium into injections. Small amounts were found. It is impossible to say if this presents any long term risk as data on effects of swallowing aluminium e.g. in drinking water, cannot directly translate to injecting. The aluminium cookers warped after heating and were therefore hard to reuse. This was also reported by injectors. Future manufacturers should be encouraged to look for metals that do not react with drug solutions, are fragile enough not to be reused and cheap enough to facilitate supply.

Acid tests: Citric and ascorbic acid from sterile sachets were used to prepare heroin injections. In the lab the acidity of the injections (pH) was found to be adequate at less than half a sachet to dissolve all the heroin in a '£10 bag'. When more acid was used the acidity became much lower, with more potential to damage vessel walls and tissues, due to higher 'osmolality'. The experiments showed how ascorbic acid has more 'margin for error' as weight for weight it has less effect on acidity compared to citric acid, however it is more expensive. Minimising excess acid is key. Of course content and weight of street drugs will vary but this may serve as a guide.

Filter tests: Makeshift filters used by injectors were compared against commercially made filters to see how well they remove particles and how much drug they retain. This is important as a good filter that holds back too much drug will not be accepted by injectors. Cigarette filters (1/4), hand rolling filters (1/4), cotton buds, Stericup filters, Sterifilt and Sartorius wheel filter (0.2 micron) were tested with heroin injections and compared to unfiltered injections. The filters all reduced particles and the Sterifilt and wheel filter performed best, with the wheel filter retaining a lot of drug and the Sterifilt very little. The Sterifilt was disliked by some injectors because it did not retain much drug, so could not be kept for times of drug drought. However others liked it because of this and said it was 'cleaner'.

Part two: Field work

This work compared quantitative data collected from 189 injectors in Aberdeen who did not have access to injecting paraphernalia with 170 injectors in Dundee who did (to sachets of acid, cookers and filters). Interviews also took place with 54 injectors to explore paraphernalia sharing in more detail and ways to reduce it.

Sharing: There was more sharing 'ever' in Aberdeen, of needles, syringes and paraphernalia. For 'past month' there was more sharing in Aberdeen but not statistically so. There were no difference in past month sharing in those who had begun more recently (since 2003). However frequency of use of needle exchanges or use of each paraphernalia item for each injecting episode was not measured, so differences cannot be attributed to the supply or non supply of paraphernalia.

Non infected and infected injecting complications: There were no statistical differences in infected and non infected injecting site complications. There was more groin injecting in Aberdeen, and puffy limbs or digits were significantly more common in Aberdeen compared to Dundee, but this could be due to length of time injecting. The number of infected complications was lower than had been predicted based on the literature from the USA.

Why do injectors share paraphernalia?: People in Dundee said they shared when they did not have *convenient* access to paraphernalia. Difficulties in planning ahead were compounded by passing on new paraphernalia to others in need, leaving them 'short' later. Priority in both areas was given to acquiring drugs and avoiding sharing needles. Some interviewees did not understand the term paraphernalia. Some did not consider HCV a risk from paraphernalia sharing until they were prompted.

Reuse of *own* needles was very common in both Aberdeen and Dundee and also due to lack of convenient access, the need for multiple sets to access veins and supplying others with clean equipment when they were in need.

Batch preparation was common as a way of fairly dividing drugs bought with pooled resources. The use of sterile equipment in this process needs to be encouraged.

Sharing amongst sex partners was common and not overtly recognised as a risk.

What do injectors do who can't access clean paraphernalia at exchanges when needed?: Improve, borrow new from others, reuse their own or reuse that of others. In Dundee the use of makeshift items was reported. There seemed to be more overt awareness in Dundee that sharing paraphernalia was something that should try to be avoided whereas in Aberdeen, sharing was seen as inevitable by some due to lack of supply.

In Aberdeen lack of supply created a lot of negative feelings. There was anger and frustration but also some bitterness that injectors were not seen as worth investing money in. Many thought supply would attract people into services, in particular because of the great difficulties in buying citric acid that were reported. There was a high level of distress around this matter and some felt people took greater risks because of lack of easy access to citric acid across the city.

How can sharing be reduced?: Increased number of outlets, their locations and opening times were suggested, although there were some reservations about pharmacy needle exchanges. In particular some concerns were expressed about privacy and staff attitude. In Dundee it was suggested that the confidentiality policy is publicised more. Posters in community centres and hostels overtly stating confidentiality policies were suggested, as were business cards with similar info and opening hours that could be distributed by injectors.

Many recognised that newer and sometimes younger injectors take more risks and reflected on past experiences with regret. Drawing newer injectors into services was seen as important. Many in Aberdeen thought the supply of paraphernalia would attract newer injectors.

Several people thought HIV was more serious a concern as it had received mass media attention. HCV was seen by some as inevitable. Some considered the lack of mass media campaign meant it was less of a problem. There was support for media campaigns, information from drugs workers, leaflets detailing explicit risks and the use of shock tactics.

Recommendations:

Needle exchange services should promote hand and site cleansing to injectors prior to injection preparation. They should consider providing convenient to carry alcohol hand rub (e.g. belt clip) and could also promote its use for site cleansing. Such supply should be evaluated on a health and economic basis.

Strategies to prevent blood borne virus risks from batch preparation should be considered. Education campaigns should focus on the message to always use clean, sterile water and sterile acid to prepare the batch and new sterile needles by all who remove drugs from the batch.

Manufacturers of paraphernalia should seek to identify other inert metals to produce affordable cookers.

Injectors should be encouraged to add small quantities of acid when preparing injections. Depending on purity, less than half of a citric acid or ascorbic acid sachet may be enough to prepare a £10 bag of heroin. Larger quantities of drug will require more acid. Injectors should be advised to inject slowly to reduce irritation by either acid.

Of the filters tested in the lab, the Sterifilt showed the most theoretical benefits. However part two showed they are not universally liked. Supply is advocated and injectors supplied them for the first time should receive education on the technique to use them.

The term 'paraphernalia' needs to be clarified, as it appears not always to be understood by injectors.

Strategies to address the perception and practice of paraphernalia sharing should be implemented and evaluated. The supply of paraphernalia is strongly desired by injectors.

Paraphernalia supply should be accompanied by strategies to encourage forward planning in injectors, explicitly highlight risks of sharing, and discuss perceptions of HCV compared to HIV. The differences between HCV sexual risks and equipment sharing risks needs to be highlighted.

The less public profile given to HCV compared to HIV should be discussed with injectors. It should be explained that lack of mass media campaign does not mean injectors are themselves at less risk.

More research into mass media campaigns on HCV prevention should be explored. Subsequently, findings should be used to inform whether such mass media campaigns should be undertaken.

The supply of paraphernalia, if introduced in Aberdeen, should be evaluated to establish if it attracts more injectors into services and if so, whether this includes newer injectors

Strategies are needed to increase needle and syringe distribution. Unofficial peer supply is already common. Quantities given to injectors need to be sufficient and access

convenient enough to prevent sharing. This has been recommended by previous research.

When supplying paraphernalia, convenience and accessibility need to be maximised, free distribution is advocated. Peer distribution exists and could be further encouraged.

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The report, "Safety, Risks and Outcomes from the Use of Injecting Paraphernalia", which is summarised in this research findings is a web only document and is available on the publications pages of the Scottish Government website at:

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