hepatitis C and needle exchange

Part 1 of a major new series on needle exchange sizes up the challenge posed by hepatitis C and finds it huge. To come – how exchanges here and overseas have measured up.

About this document

Background text

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This and later articles are extracted from a review available on request from the author. The review was compiled with the assistance of Neil Hunt of the Kent Institute for Medicine and Health Sciences; Ali Judd of the Centre for Research on Drugs and Health Behaviour; Duncan Stewart of the National Addiction Centre; Anita Morrison of the Scottish Substance Misuse Effective Interventions Unit; Laurence Gruer of the Public Health Institute of Scotland; Jim Camp and Terry Shields of the National Needle Exchange Forum; Lawrie Elliott of the University of Dundee; Clare Sears of the University of California; Hilary Klee of Manchester Metropolitan University; Amina Lahrichi of the Addaction Harm Reduction Team in London; Shaun Speed of the University of Manchester; and Bobby Smyth. Though they have enriched it, they bear no responsibility for the final text.

To come ...

Case studies detailing how needle exchange can be thwarted by inadequate support and counterproductive regulation.

The British record including new light on the influential early evaluations.

What it will take for exchanges to curb spread of hepatitis C.

Needle exchange has a history of under two decades and in Britain about 15 years.[1] Rushed through to forestall replication of the HIV disasters in Edinburgh and Dundee,[2] exchanges in Britain had little to guide them. To this day there is neither a solid body of evidence nor an expert consensus on which practices work best. Trial and error, local reports, and an active network of exchange workers, have been the main vehicles for progress.

Recent studies from North America and continental Europe casting doubt on needle exchange's value are one reason to reconsider the British experience, but the more important reason is the challenge of hepatitis C. Continuing spread of this virus reveals weaknesses which HIV does not, exposing minimal HIV spread as a false reassurance.[3 4 5] Britain and other countries are only now coming to grips with this disturbing revelation.[6]

The consequences of failing to stem hepatitis C are severe. After 20 years about 1 in 6 infected patients develop serious chronic liver damage and may die of complications or require a liver transplant.[7 8] After another ten years nearly a quarter are likely to be at this stage.[9] In Australia it has been estimated that each hepatitis C infection will eventually cost the health service over £5000.[10] Plus social costs the bill is nearer £7000 or nearly £17,000 without discounting later expenditures.[11]

Though pharmacy exchange is important, this review focuses on standalone exchanges or those based in drug services. Greater investment and expertise mean the expectations are greater – they have more to prove.

Litmus test for infection control

What makes hepatitis C so hard to control is the degree of behaviour change needed to intercept its transmission. Reductions in risky sharing of injecting equipment can be enough to minimise the spread of HIV. For hepatitis C, the emphasis is less on reduction, more on elimination,[12] and this applies to all sorts of equipment, not just needles and syringes.[9 14 15] Across the world, what has worked tolerably well in curbing HIV spread has not worked for hepatitis C.[9 12 16 17 18 19 20 21 22 23 24 25] Nowhere has a public health system been able to hold levels of hepatitis C among injectors down to 5% or less, a level commonly bettered for HIV.[4]

The challenge posed by the virus arises from a combination of robustness, infectivity and prevalence.[12] Hepatitis C lasts much longer than HIV in blood and very little blood is needed to spread it.[19 26] As a result, it is more easily spread through sharing other injecting equipment ('paraphernalia') as well as needles and syringes.[9] An analysis of equipment used by hepatitis C-infected injectors (or groups including an infected person) revealed that the virus had contaminated about 7 in 10 syringes and swabs and from a quarter to 40% of filters, spoons and water samples.[27]

These properties contribute to a much higher prevalence of infection among injecting drug users than HIV[4 28] – across Britain, about 40%.[29 30] Especially in London, infection rates can be much higher: three-quarters or more in methadone[31] and needle exchange[32] samples. Hepatitis C reached these levels partly because the virus took hold before anyone knew it existed and well before anti-infection measures were implemented in response to HIV.[2 4 25] The upshot is that in Britain and similar countries, after ten or more years of injecting – sometimes far fewer[33] – infection is the norm.[7 34 35 36] Once someone is infected, typically they remain infected and infectious for decades.[20 21]

Prevalence, robustness and transmissibility interact to elevate risk.[17 26] On the basis of Australian infection rates (not very different from the UK), sharing injecting equipment is 150–800 times more likely to spread hepatitis C than it is to spread HIV.[19] As a result, hepatitis C spreads through an injecting population 10–100 times more rapidly.[21]

Why focus on needle exchange?

The argument that needle exchange is critical to containing hepatitis C rests partly on eliminating the alternatives. An effective vaccine is not on the horizon.[7 21] Post-infection treatment can reverse the disease in a substantial minority, but it's feared (probably mistakenly[37 38]) that drug injectors will not comply with the onerous regime[35] and will in any event become re-infected. For these reasons, UK guidelines say current injectors should normally not be offered the most effective of the treatments.[7] Sexual spread[8 39] and mother-child transmission[12] are rare. By default, the spotlight is left on preventing infection among injectors.

Among established services, only methadone maintenance and needle exchanges attract large numbers of injectors. Methadone has a convincing

record on HIV[40 41] but has yet to be shown to significantly curb hepatitis C.[12 13 14 23 25 42 43 44 45] Usually it is entered too late to prevent most patients already being infected[3 12 46] and has at best only a moderate impact on risk behaviour.[25 46 47 48 49 50 51]

Prescribing heroin for injection under supervision can rapidly reduce risk behaviour and cut (without eliminating) spread of hepatitis, but by the time this more radical treatment is resorted to, few patients are free of infection.[52] That leaves needle exchange. Exchanges cannot reverse the epidemic on their own or without support, and nor should they be expected to.[2 7 9 30] But, as the new English hepatitis C strategy acknowledges,[6] they are the key players.

The nature of the evidence

If hepatitis C is the challenge and needle exchange the main player, what do we know of how well it performs? Evidence can be found at three levels. The first two are the subjects of this article. First, if the virus is spreading rapidly, this constitutes proof that *something* is lacking in infection control practices ◤ *Virus spreading rapidly*. Second is the question of whether networks of harm reduction services featuring needle exchange have at least been able to restrain the spread ◤ *Harm reduction curbed spread*. At these levels we can use data on trends in whole populations of injectors on the assumption that needle exchange played its part. The third level – covered in later issues – relies on data directly from needle exchanges and their users. At this level the focus will be on *case studies of failures*.

Case studies because exchanges vary on many dimensions which interact between themselves and with the surrounding environment, processes best witnessed through a rounded picture of the few well-documented exchanges. *Failures* (or partial successes), because these throw into relief what makes most exchanges work. Also cited are all the studies which have directly evaluated the impact of needle exchange on hepatitis C. This meagre data is supplemented with data on HIV and hepatitis B (if these are spreading then almost certainly so too is hepatitis C) and with information on the behaviours known to spread viral infection.

No UK exchange has been documented in sufficient detail to be form a case study. Instead, all available scraps of evidence from Britain are brought together including evaluations of the first UK exchanges, still the most thorough studies.

Though relevant data was conscientiously sought, the extended review underlying this and later articles was not a comprehensive and systematic review of everything known about syringe exchange effectiveness. The focus was on hepatitis C and on studies which shed light on what sometimes makes needle exchange *not* work.

Virus spreading rapidly

Arguments that more needs to be done to combat hepatitis C rest on *incidence* data. Evidence that many injectors *are* infected (prevalence) could just be a historical legacy. What matters is whether today's services are preventing *new* infections (incidence).

The contrast with HIV is instructive. By the late '90s virtually no infections were recorded among newer injectors[28 54] or in blood submitted by injectors in Scotland,[55] yet hepatitis C was spreading rapidly. After up to three years' injecting about 1 in 10 injectors seen at drug services in England and Wales are infected[28] and by five years a quarter.[29] Over a similar period, in England's north west a third were infected[56] and in Glasgow 43% (but in Edinburgh 'just' 13%).[57] Demonstrating the potential for very rapid spread, in Glasgow in the first half of the 1990s, within two years 42% of injectors were infected.[58] Across the UK, in the 1990s the numbers of infections identified by laboratories rose by multiples of ten.[55 59 60]

Other countries have seen even more rapid spread, a warning of what can happen. Within a year it is not unusual to find a substantial minority[15 19 23 25 61 62 63 64] of injectors infected and sometimes, as at one stage in Vancouver,[65] the majority.[66] Most dramatically, in Belgium in 1995, within a month of starting to inject nearly half of a sample of heroin addicts had become infected; within a year, over three quarters.[44] Needles and syringes can freely be bought from Belgian pharmacies but even in the late '90s needle exchange provision remained patchy.[67]

In populations where new HIV infections have been effectively suppressed, hepatitis C can still be spreading rapidly.[65] An Australian HIV prevention service had its intended effect on HIV with just 0.17% of clients per year becoming infected, but 21% became infected with hepatitis C.[23]

However, as in the UK, there can remain a window several years wide when most new injectors are free of hepatitis C infection and could potentially be kept that way.[45 62 64 68] For example, in Australia, on average it takes about seven years to become infected.[25]

Broadband transmission aids spread

Some of the factors which influence the risk of hepatitis C infection (such as imprisonment[3 23 25 45 56 61 69]) are beyond the reach of needle exchanges, but others may need to be taken into account in service planning.

Sharing uncleaned syringes and needles is a well-known risk factor, but sharing other equipment or 'cleaned' syringes have also emerged as major transmission routes. Nearly 90% of infected patients at a London methadone service denied ever having shared a 'dirty' needle and syringe.[31] However, two-thirds had shared these after cleaning and 80% other injecting equipment, in both cases significantly more often than among those not infected. Similarly in North America,[4 65 69] Australia,[23] and Belgium,[44] sharing implements such as 'cookers' or filters has been

Preview of conclusions

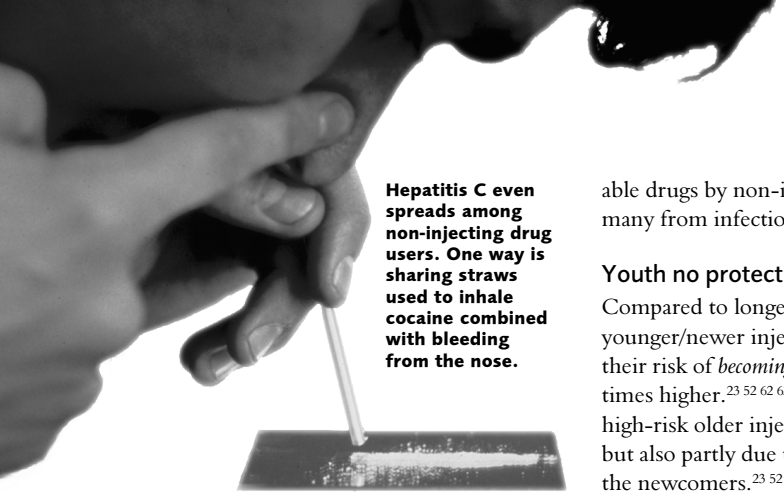
An advanced sketch map of where this multi-part series is heading will help readers assess signposts to the conclusions reached in subsequent issues.

In this issue it's established that hepatitis C has already infected a substantial minority of British injectors and is spreading rapidly due to continued 'sharing' – shorthand for the various practices which risk blood-to-blood contact mediated by materials and equipment used to inject. Without harm reduction measures such as needle exchange, its spread might have been even worse,[7 20 28] but their impact has been nowhere near enough to prevent the hepatitis C epidemic. Given current services, progress has plateaued at a level which leaves HIV a potential threat[53] and hepatitis C leaking in volumes through the gaps.[22]

In later issues it's argued that rising above this level will require more intensive and extensive service provision and a determined strategic focus on eliminating risk behaviour. In this exchanges will be pivotal, but success is not guaranteed. Exchanges do not automatically reduce risk behaviour or eliminate the potential for epidemic viral spread;[1 18] it all depends on the volume and nature of the service. In Britain, evidence for effectiveness in reducing risk behaviour or curbing infection is extremely limited. Across the world, studies have generally yet to prove effectiveness against hepatitis C.

Rather than these findings casting doubt on continuing with needle exchange, the overriding conclusion is that we need far *more*. Exchanges should be the vanguard of a harm reduction effort of sufficient volume to safeguard the health of the vast majority of injectors (and their associates), not just those looking for ways out through treatment. More resources and support could also pave the way for a proactive working style which maximises the opportunities for intervention. With the core exchange function optimised, attention could be turned to extensions which harness drug user networks and take exchanges closer to a one-stop, comprehensive harm reduction service.

Not a pretty sight: the hepatitis C virus.



Hepatitis C even spreads among non-injecting drug users. One way is sharing straws used to inhale cocaine combined with bleeding from the nose.

implicated in infecting up to a third or more of injectors who denied syringe reuse. Sharing out drugs by 'backloading' (drawing up the solution from one syringe into another) is also an established risk factor.[68]

The more people you share with, the greater the chance of infection.[42 44] Polydrug use and especially injecting cocaine or cocaine/heroin mixtures ('speedballs') is commonly[52 62 65 68 69 70 71] but not universally[13 63] found to elevate risk of infection by hepatitis C, and the same has been found for HIV.[72 73]

This is partly because the short-acting cocaine is injected more often, but also because some patterns of drug use are markers of a disordered lifestyle which features risky injecting. In one British study, this seemed to apply to injecting cyclizine, benzodiazepines or pharmaceutical opiates;[56] in another, polydrug use generally and specifically injecting temazepam.[74] Elsewhere, injecting cocaine[62 71 75 76 77 78 79] is commonly implicated, but sometimes too supplementing your main injecting habit (usually heroin) with cocaine[139] or crack,[68] tranquillisers,[51] or heavy drinking.[139]

Dabbling still a risk

Much more so than for HIV, infrequent injectors are still at substantial risk of infection with hepatitis C.[44 45 62 65 68 70] For example, in Belgium over half the occasional injectors in a sample became infected and once other factors had been taken into account, injecting infrequently was no protection.[44]

This happens because occasional injectors are less likely to have their own equipment and more often reuse other people's. As a result, the protection afforded by fewer injections is counteracted[51] by the fact that each injection is more likely to involve a syringe, spoon or filter which might have become contaminated – in Dublin, six times more likely.[80]

Even among what seem (sometimes this is questionable[81]) to be *non*-injecting drug users, hepatitis C infection can be substantial. A possible mechanism applicable to 'snorting' cocaine is sharing straws used to inhale the drug combined with the common experience of bleeding from the nose.[82 83] However, the risk for non-injectors is far less than for injectors.[66 84] Opting to take injectable drugs by non-injecting routes saves many from infection.[14]

Youth no protection

Compared to longer-term injectors, fewer younger/newer injectors are infected[25 70] but their risk of *becoming* infected can be several times higher.[23 52 62 63] This is partly because high-risk older injectors are *already* infected, but also partly due to greater risktaking by the newcomers.[23 52]

Local British studies have found that injectors with shorter careers are the ones most likely to have recently shared injecting equipment.[56 85 86] Nationally, new injecting clients aged under 20 seen by drug services or GPs are most likely to have recently shared, those aged 30 or more least likely.[55 87] A similar pattern was apparent at Australian exchanges.[45] Newer and younger injectors are more likely to rely on older and potentially infected injectors for equipment or for help with injecting. In Baltimore, people initiated into injecting by someone at least five years older were most likely to become infected, a finding attributed to the greater chance that older injectors will themselves be infected.[63] Newcomers will also tend to be less aware of risks and how to avoid them.[88]

Harm reduction curbed spread

Rapid spread of hepatitis C signifies that anti-infection strategies have not been effective enough, not necessarily that they have been *in*effective. Without measures such as needle exchange and methadone maintenance, the virus might have spread yet more rapidly.[7 89] For this there is indeed some evidence,[20] but even where harm reduction measures are well established and widely accessed, they are not making sufficient impact.

Some of the evidence comes from the history of the hepatitis C epidemic in England and Wales. Data from a national sample composed mainly of injectors in treatment is consistent with a downturn in new infections from the mid-'80s when anti-HIV measures started to be implemented.[29] Other English studies tell a similar story for hepatitis C[56 90] or B.[31] Though the timings are different, data from Edinburgh and Glasgow (which account for most of Scotland's infections[30]) also suggests that new infections fell around the times when syringe exchange and methadone services became widely established.[57]

Drawing on data from 101 cities in five continents, the Australian health department has compared trends in hepatitis C in cities with and without needle exchanges.[91] On average needle exchange was associated with a reduction in prevalence in injectors of around about 2% year – worthwhile, but not as great as for HIV. When incidence was analysed it was indeed lower in cities with exchanges, but still high (16% versus 25% per year) and the difference made by exchanges was neither large nor statistically significant.

Services now making more impact?

Recent awareness of hepatitis C as a risk in its own right may have further dented its spread. In Britain this could be the message of reductions seen (in the late '90s) in the proportions of injectors who tested positive for hepatitis C.[28 30] Similarly, at a London methadone clinic, only among the most recent initiates to injecting in the late '90s was there a drop in the infection rate so steep that it could not be explained by differences in how long people had been injecting.[31]

In other countries, too, recent falls in what remains rapid spread may reflect intensified anti-infection measures. In Dublin in the 1990s, implementation of extensive harm reduction services coincided with a fall from nearly two-thirds to under 40% in the proportions of new (up to two years) injectors who became infected with hepatitis C.[92] The fall was seen mainly in the newest (up to a year) injectors. Among those injecting for one to two years, at 57% the infection rate approached pre-harm reduction levels, suggesting that the main effect of service provision was to delay infection.

In Australia the infection rate among newer injectors seen at syringe exchanges nearly halved in the two years from 1995, a period when harm reduction was adopted as national policy and hepatitis C became a recognised problem.[45] In contrast, earlier anti-HIV measures including syringe exchange seem to have curbed the spread of hepatitis B but not of hepatitis C.[15 25]

Risky injecting remains common

Underpinning continuing spread of hepatitis C is the continuation of behaviours capable of transmitting the virus. Most worrying is a recent rise in the proportion of injectors interviewed at drug services or genitourinary clinics in England and Wales who admit in the last month having passed on or received used needles and syringes.[28] Up to 1997 typically under 20%, in London this proportion doubled to over 40% in 1999 and 2000. Outside London it rose to about 30%. The increase remained when the focus was narrowed to newer and younger injectors.

This picture was replicated in assessments made in England[87] and Scotland[55] of new or returning clients seen at drug services or by GPs. There were substantial rises in the years leading up to 2000/01 in the numbers injecting and in the proportion of injectors who admit having recently shared – in England, from 12–13% to 20–21% over the '90s. The same type of statistics show that in England and Wales recent sharing of injecting equipment (not just needles and syringes) is the norm among new drug injecting clients.[28]

Britain is not alone in finding that relatively extensive harm reduction services can still leave high levels of risky injecting. The same was found in Dublin,[92] but there the extensions left the supply of sterile equip-

ment short of need and not sufficiently accessible.[80] After an initial reduction, in Amsterdam sharing has remained sufficient to spread HIV to 3–4% of injectors a year[51 93] and hepatitis C to many more.[13] In Europe's Maas-Rhein region, drug subcultures and insecure living conditions have limited the impact of service provision: though over 90% of injectors saw fresh equipment as easily available, nearly half usually shared syringes with a partner or friend.[94]

Official statistics underestimate sharing

Official British statistics are worrying enough but do not tell the whole story. In 1998, 1214 injectors not currently in treatment were interviewed in seven English cities.[90 95] Detailed questioning revealed higher sharing levels than the brief enquiries used to generate official statistics. In the last four weeks, 78% had injected in ways which might spread infection. Just over half had reused or passed on used needles and syringes. Three quarters had shared materials such as filters, spoons, water or bleach, which were also shared more often. The saving grace was that sharing was typically confined to two friends or partners rather than strangers.

It was a similar picture in the south west of England where in the past month 40% of a sample composed mainly of heroin injectors had shared syringes/needles and 85% other equipment.[96] On nearly 1 in 5 occasions the injecting partner was an 'acquaintance', not a friend. In London, 62% of heroin injectors interviewed in 1994 had in the past year shared equipment of some kind.[97] Syringe reuse tended to be restricted to close friends and partners, but about a quarter had reused spoons or water after (and nearly a third before) a casual acquaintance.

A US study has calculated that injectors who had reused both needles/syringes and other equipment had exposed themselves to infection 79 times in the past month, of which 51 were due to reusing cookers, filters or water.[98] Where, as in the UK, syringes are more easily available,[99] the balance of risk occasions is likely to be weighted even further towards injecting paraphernalia.

Some attempt to clean needles and syringes before reuse is the norm, but studies in London[85] and the north west of England[100] suggest that only rarely is this adequate to kill HIV, let alone hepatitis C. In the latter study the false reassurance generated by cleaning seemed to encourage syringe and needle sharing.

Why sharing persists

Scarcity remains a major reason why syringes are shared, but in legislatures such as the UK, often this is scarcity at the *micro*-level – a new set not being to hand at the time and place when immediate use is prompted by withdrawal symptoms, the desire or opportunity to take drugs, or the need to consume quickly to avoid detection.[102] The strength of these urges may be why some British studies have found that the greater their dependence on drugs, the more likely injectors are to share syringes.[74 96 101]

It's a friendship thing

As significant as equipment shortages are the social interactions through which risks are recognised, given weight, and accepted or avoided. Even when fresh supplies can be had, personal closeness may be seen as mandating closeness in the form of sharing a syringe.[2 103] Where less intimate sharing has given way to anti-HIV messages, intimate sharing persists. In the UK[32 95 101 104] and other countries with developed harm reduction services,[80 94] most injectors now share syringes only with one or two partners and friends and tend not see this as an infection risk.[101 105 106] British studies have found injecting with friends closely related to sharing.[74] Where young injectors have grown up or initiated drug use together, perception of risk may be low ('I know where you've been') and sharing levels high.[74 88]

Given these ties, challenging sharing may be interpreted as a challenge to the relationship itself. What from the outside is 'risk behaviour', for the participants serves to symbolise and maintain the social ties on which they depend.[105] Social relationships are also power relationships, most evident in male-female sexual partnerships (within which resisting sharing can risk violent repercussion)[103] but also in the initiation of younger by older and more experienced injectors. Some British studies have found that the more an injector allows another injector to take the lead in the acquisition, preparation and administration (as in injecting them) of drugs, the more likely they were to have reused injecting equipment.[96 100]

Such ties circumscribe each individual's freedom to take or not to take risks. As a result, networks of drug users tend to jointly develop risky practices[88] and also to reduce risk together through example, influence and changing social norms.[107] What is seen as a risk is itself socially defined, not just in terms of the people with whom sharing is considered too risky, but also the risk practices which the network and its opinion leaders dismiss or see as beyond the pale.[105]

Partners in adversity

The process of obtaining drugs can itself generate sharing liaisons – business partnerships but with the emotional closeness lent

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Platform to build on

The weight of international evidence is that exchanges have reduced behaviours which spread blood-borne disease and reduced HIV spread without increasing the number of injectors or the frequency with which they inject.[121 122 123 124 125 126] This evidence is sufficiently persuasive to be acknowledged by major international[127] and national[128 129 130] authorities, even in the USA[8 17 120 131] where federal opposition to funding needle exchange remains unyielding. In Britain, an early harm reduction-oriented public health response to HIV, in which needle exchange was important both as a symbol[74] and a contributor,[2] is credited with helping to avert the epidemics seen in legislatures which denied sterile injecting equipment to drug injectors.[2]

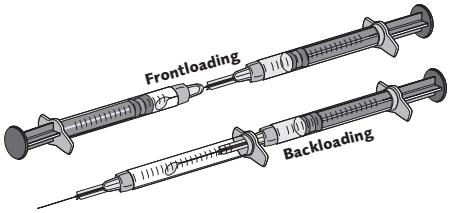
The most recent evaluation published late in 2002 is from the Australian health department.[91] It replicated and extended an earlier study[124] comparing trends in HIV prevalence in cities with and without needle exchange programmes. The conclusion was that on average HIV prevalence decreased 18% each year with exchanges but increased 8% without them. The advantage was so great that it was very unlikely to have been due entirely to other services implemented alongside needle exchange.

North American[132 133 134] and Australian[91 135] analyses based on the health care costs of treating HIV infection (and a New Zealand report which also took hepatitis C treatment costs into account[136]) suggest that even with this limited accounting of benefits, needle exchanges save far more money than they cost. In one analysis cost-savings continued to accrue until nearly 90% of injectors' syringe needs were met by a combination of needle exchange and pharmacy distribution.[137] In some scenarios, HIV would best be prevented by allocating the bulk of anti-HIV funding to syringe exchange.[138]

After an injecting episode involving an infected person, hepatitis C contaminated 7 in 10 syringes and swabs and a large minority of filters, spoons and water samples.

by sharing the threats posed by illegality, a closeness which spills over into other forms of sharing.[108] On the margins of society, under attack and despised, lacking material resources, and subject to the fluctuations of the illicit market and official suppression, addicts close in on themselves and develop mutual support mechanisms.[88]

Social etiquette, reciprocation and the display of trust may demand that sharing extends to drugs and injecting equipment.[103] Reciprocity seems apparent in the very strong tendency for injectors who reuse used syringes also to pass on their own syringes within their social circle.[51 77] More directly, poor injectors commonly pool money to buy drugs and sometimes jointly commit the crimes which fund those purchases.[88] Group-based purchase encourages group-based use and the sharing of injecting equipment.



The most convenient and 'fairest' ways of sharing out drugs also share out hepatitis C if the virus is present.

Adversity not shared can also precipitate risk. In open drug markets subject to intense police pressure, addicts are reluctant to carry syringes and anxious to consume drugs rapidly. Many resort to using whatever equipment is to hand and to other practices (eg, mouth-to-mouth transfer of drugs) which could spread infection.[88 109 110]

In the USA,[75 76 111 112] Canada,[113] Ireland,[80] the UK,[104] and the Netherlands,[71] indicators of social exclusion and deprivation such as homelessness, poor education, parental unemployment, and poverty are linked to unsafe injecting. Lack of a secure home base may be partly why in the north west of England, heroin/polydrug injectors who injected in the street or in public were more likely to reuse other people's syringes and needles and to pass on their own.[100] Deprivation and high levels of dependence, psychiatric problems and depression also obstruct risk reduction efforts.[114] It is, for example, very difficult to follow hygiene guidelines when injecting in public or in abandoned buildings with no water supply.[88]

The risk of becoming infected must also be placed in the context of a lifestyle imbued with risks such as fatal overdose, which to the drug user may seem more immediate, more probable and more serious.[105]

Incentive to share paraphernalia

Paraphernalia sharing often continues even when normally a new syringe is used for each injection. Social norms and reciprocation play their part, as in the donation of used filters (from which drug residues can be extracted) to occupants who allow their premises to be used for injecting, and many injectors are unaware of the risks from sharing spoons, filters and water.[88 115 116 117]

There is also a practical incentive. Reused syringes clog and reused needles lose their edge, making injecting painful and difficult. Purely in terms of getting a problem-free and rapid hit, the incentive is to use a new set.[102 118] No such incentive promotes avoidance of reusing spoons, filters and water. Instead, the incentive can be to share.

The risk arises especially when injectors share jointly purchased drugs.[88] In some cases, too, business cooperation in drug dealing is remunerated by drugs which the partners divide up and inject together. The most reliable, the quickest, and what may also be seen as the fairest ways to prepare and parcel out the drug involve collective use of equipment, risking contamination of each injector's syringe and needle.[88 102 117 118] Among these are drawing up quantities from a common pool or using one syringe to squirt measured amounts into the others. Filters too will be shared and may later be recycled to extract drug particles.

Except in the (for hepatitis C) unlikely event of a stable, infection-free injecting network,[119] eliminating viral spread might virtually demand that injectors inject in isolation, no matter how close their relationships, a socially and practically difficult objective.

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