

hepatitis C and needle exchange

Britain embraced needle exchange more warmly than some other countries but here too resource shortfalls and counterproductive restrictions have prevented services from achieving their full potential. We examine the evidence from the pilot studies of the late '80s to the present day.

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The first part of this series (▶ issue 8) established that hepatitis C is still spreading rapidly due to continued sharing of injecting equipment. A process of elimination left needle exchange as the main service modality with the potential to significantly curb the epidemics. A series of case studies (▶ part 2, issue 9) established that this potential *can* be realised, but also that exchanges in cities in North America and Europe have usually been unable to demonstrate their effectiveness against the virus. Service restrictions forced by or intended to deflect official and public hostility seemed the major underlying reason for the deficiencies which allowed the virus to spread.

In this issue we'll examine the British record. Here needle exchange¹ is so accepted that many will be surprised to hear there is no hard evidence that exchanges help attenders reduce risk behaviour or

avoid infection with HIV or hepatitis C.

This may simply be because the studies have not been done. Britain's greatest research effort dates back to the late 1980s when government-backed pilot exchange schemes were investigated by a team led by Professor Gerry Stimson, later to head the Centre for Research on Drugs and Health Behaviour. We know little about what happens in today's exchanges and less about their impact⁹⁹ – all the more serious because the early years can be a poor guide to what will happen later.^{51 74}

In what has been done we can see the resource and service restrictions which limited the success of needle exchange in the case study cities. Given these limitations, British work has generally been unable to establish added benefits from needle exchange in an environment where equipment can readily be sourced from pharmacies.



Unexpected attendance pattern undermines national pilot study

April 1987 was the launch date for the 15 pilot schemes in England and Scotland.

From the start it was realised that supplying needles and syringes was might not be enough to change behaviour, and schemes were mandated to provide advice and counselling on drug misuse, HIV risk and safer sex. Gerry Stimson's team was commissioned to see if the experiment had worked. Based on injectors attending the schemes to the end of March 1988, their most influential findings¹ were released as a project report¹⁸⁹ before being published in the journal *AIDS*.¹⁹³ The report declared the findings inconclusive, but the *AIDS* article found "small but encouraging" reductions in the risk behaviour of attenders. It was enough to legitimate the nationwide expansion of needle exchange already under way. However, the study as a whole, and especially the more upbeat *AIDS* report, were seriously flawed.

Few attenders followed up

The first problem was that the sample of attenders was a tiny and unrepresentative fraction of all the people who used the exchanges. Even if they had reduced their risk behaviour, it would be impossible to say whether the same could be expected of exchange users as a whole. This happened because the researchers had assumed that the regularity of

injecting would be matched by regular exchange attendance. Given this assumption, it would matter little if instead of collecting baseline HIV risk data at the first visitⁱⁱ (considered too intrusive) they waited until the injector returned sometime within the first month. Results could then be compared against a repeated interview about three months later. Change to less risky behaviour (especially if this exceeded change among non-attenders) would be a sign that the exchanges were having their intended effect.

But just 142 injectors completed both interviews – 6% of the 2449 seen by the schemes. The primary reason was that only a small fraction repeatedly returned. So unexpected was this that no provision had been made to follow up the drop-outs, leaving a question mark over the schemes' impact on 94% of their visitors, and on why they had dropped out. Moreover, the 142 differed from the typical visitor. On average they had been injecting for nearly 11 years, the remainder for five. There were fewer women and heroin injectors but many more injecting amphetamine. Also, they had stuck with the exchanges when the vast majority had not. They may not even have been representative of regular attenders, many of whom were not interviewed by the exchange staff who collected the baseline data.

Shifting benchmark

The second problem concerned the comparison samples. To be sure that risk reductions in attenders were due to the exchanges (and not, for instance, to the media campaigns running at the time), these were to be benchmarked against trends over a similar period among injectors who had *not* attended exchanges. The researchers started with a baseline sample of 220 non-attenders but just 69 could be reinterviewed three months later. However, at this time they did interview a *different* set of 114 non-attending injectors.

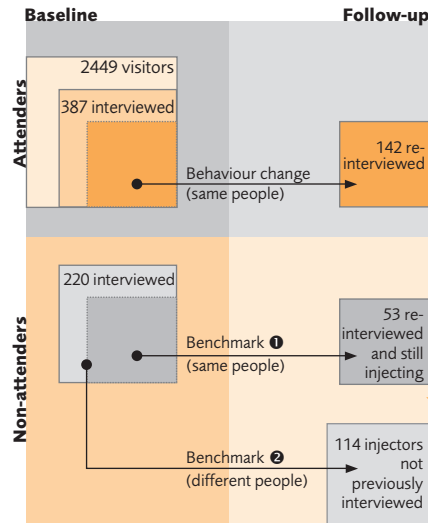
This left a choice of benchmarks. The first was behaviour change among the 69 reinterviewed non-attenders, or at least the 53 who had continued to inject **chart**, benchmark ①. The second was the difference between the behaviour of the two *different* sets of non-attenders **chart**, benchmark ② – the choice made when the results were published in *AIDS*. It created a benchmark of “no substantial reductions in risk behaviour” for the exchanges to better, and they did. In contrast, exchange attenders had made “small but encouraging” reductions in their risk behaviour: fewer were now sharing (down from 34% to 27%), they shared with fewer people, and fewer re-used used equipment. Though the reductions were not statistically significant, this was the key piece of evidence; attending needle exchanges had led to a reduction in HIV risk not evident among non-attenders.

But like was not being compared with like. Attenders were the *same* people interviewed twice, non-attenders two *different* sets of people. The very experience of being interviewed may have led the attenders to change their behaviour¹⁹⁴ or to give different answers the second time around. Also, the two sets of non-attenders had not been randomly selected from the same pool. Trends (or non-trends) in their behaviour could simply be due to differences in the people interviewed.

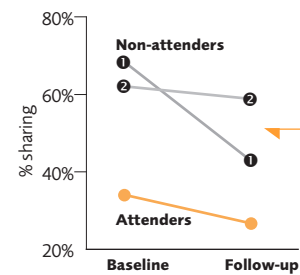
For these reasons, the project report had instead used benchmark ① – behaviour change in reinterviewed non-attenders. This

In the next issue

The *final part* of this series will draw together the threads in the form of the limitations which threaten viral control and the strategies which hold promise for the future. They form a revitalised agenda for needle exchange commensurate with the challenge of hepatitis C. Meeting this challenge will require funding authorities to give needle exchange the priority it deserves and needle exchanges to build on their unique relationship with injectors in ways which greatly extend the reach of anti-infection initiatives.



Depending on which benchmark was chosen, attenders at pilot exchanges either made greater risk reductions than non-attenders ② or actually improved less ①. The more favourable benchmark was chosen when the results were published.



time the comparison with attenders was *not* encouraging. Non-attenders had actually made *greater* reductions in their risk behaviour: 30% had stopped sharing needles and syringes compared to 20% of attenders, another 20% still shared but with fewer people compared to 6%, and slightly fewer had increased their level of risk.ⁱⁱⁱ

The project report dismissed both comparisons, arguing that the non-attenders were not comparable to the attenders because their risk behaviour was so much higher. As a result, the researchers declared themselves unable to reach a “conclusive answer to the question about the specific impact of syringe-

exchange on risk behaviour.”¹⁸⁹

Higher risk levels among non-attenders also signified that the exchanges were not attracting the people at greatest risk. Instead it seemed that they attracted injectors who in response to AIDS had already reduced their sharing (75% said they had) to an unusual degree. Whilst at the exchanges, they continued on the same trajectory.

In sum, the pilot exchanges neither attracted high risk injectors nor could it be shown that they reduced risk. The impression that they had was based on a comparison group which was in fact not comparable and on a tiny proportion of exchange attenders.



Different routes to equivalent risk reduction in the South

With an improved methodology, Gerry Stimson’s team generated similar findings over the next two years in a study of four schemes, one in the south west of England and three in London.^{104 190} They interviewed effectively a random sample of attenders, attempted to follow them all up a year later, and tried to follow up a comparison sample of injectors who at the first interview had not attended exchanges for at least three months. Both samples were tested for HIV at both time points, enabling a comparison of the rate of new infections – the bottom-line measure of whether the exchanges were working.

Barely more than half the injectors were actually reinterviewed but on the available measures they seemed representative. At the start of the study, most attenders had already been going to the schemes for over six months. All but a few returned after their first interview, attending on average about weekly. Between interviews, most ‘non’-attenders gave exchanges a try, but on average just once every three to four weeks. The comparison then was between fairly frequent exchange users and non- or less frequent

users, most of whom sourced their equipment from pharmacies.

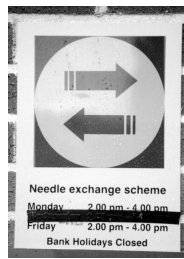
Findings from the first interview were consistent with a protective effect of exchange attendance. Fewer attenders had recently shared syringes or needles (34% versus 38%), re-used a used syringe (24% versus 32%), or shared with two or more people (13% versus 19%) – all the more significant since they injected more often and had greater medical and psychological problems.

Over the following year, about the same proportions of both groups had stopped sharing, but twice as many non-attenders had done so by stopping injecting, while exchange users more often continued to inject but stopped sharing. The finding is reminiscent of one from the pilot exchanges.¹⁸⁹ In these early years it seemed that exchanges attracted injectors who, compared to non-attenders, were more often committed to injecting, but also more often committed to reducing the HIV risk this entailed.

Despite the continued sharing of a substantial minority, none of the injectors became HIV positive over the year. The saving grace was the low starting level of infection –



This needle exchange in London's East End is resourced as a comprehensive harm reduction service open virtually every day of the year.



In contrast, the only needle exchange in this English seaside town (resident population 130,000) is now open for just two hours two day week.

2.5%. Had hepatitis C been tested for the chances are that a higher prevalence plus continued sharing would have been found to have created many new infections.

Was it treatment which reduced risk?

There was some encouraging data among the sub-samples who had continued to inject over the follow-up year. Here sharing had halved (down to 18%) in the attenders but fallen by just a quarter (to 32%) among the non-attenders. But whether the exchanges were responsible is uncertain – it could instead be due to the kind of injectors attracted to them. Even at its most basic – reducing sharing by improving access to injecting equipment – they seem to have made no difference; the proportions of attending and non-attending injectors who said they shared because of difficulty obtaining equipment were identical.

If the four exchanges did have an impact, it may not have been down to their equipment supply or harm reduction advice, but to their ability to help committed injectors access acceptable treatment – treatment with *injectable* drugs. In this the four exchanges may have been exceptional,¹⁹⁵ perhaps partly because they operated in areas with doctors prepared to prescribe injectables.

Being prescribed injectables divorces injectors from drug using networks,¹⁹⁶ making it less likely that they will jointly purchase and use street drugs and share the equipment needed to inject them.¹⁹⁷ At the first interview, a quarter of attenders were being prescribed injectable methadone but just 7% of non-attenders. When injecting this methadone they were also far less likely to share needles and syringes than when injecting heroin. By the end of the follow-up year, 71% of attenders were receiving some form of methadone on prescription but just 27% of non-attenders.

Stress on attraction and retention

As intended, the early schemes contacted a heavily injecting population unwilling to enter treatment or unsuitable because opiates were not their major problem.¹⁸⁹ On the other hand, they were disproportionately missing out on women and on injectors early in their careers. Most attenders lived within two miles of their scheme,^{104 198} an early signal that convenient access is vital.

Two years later, in 1989 and 1990 a study of 20 English exchanges found little change

in the attender profile.¹⁹⁵ Each attender came about three times in four weeks and was given on average 14 syringes – assuming twice-daily injection, nearly enough for a new syringe each time and more than the average of nine recorded two years earlier.¹⁸⁹ Most schemes aimed to provide equipment on an exchange basis but did so flexibly, and most did not cap the amount of equipment they would supply at any one time.

Universally the pilot exchanges saw their role as reducing the risk from continued drug use and injecting, but the degree to which they could systematically reduce risk seems to have been curtailed by resources (most workers had other roles in the agency) and by concerns not to stray too far from the informal, accessible, non-judgemental stance seen as important in attracting and retaining customers.^{189 195}

Commonly staff preferred to wait until rapport had been established before address-

ing HIV risk behaviour and how to reduce it. Only six out of the 15 pilot exchanges ensured that all clients were advised on drug-related HIV transmission, a core function. Just one had a policy of always giving individualised harm minimisation advice. Most visitors were not in a position to receive such advice from any other competent service.^{189 195}

A wide range of other services were available directly or through referral, but there was no mechanism for making sure that need (other than for injecting equipment) was assessed and met. Advice and counselling were usually delivered when the opportunity arose, which might have as much to do with workload at the time as with the visitor's needs.

Informality and accessibility were the watchwords, and indeed there was some evidence that not adopting this stance deterred attendance. When former attenders were asked why they'd stopped going, about 30% each cited the questions they'd been asked at the exchange and being kept waiting, and over a fifth the exchange's rules, though these generally seemed to have been stripped to the essentials.¹⁸⁹ However, 'accessibility' rarely stretched to late-night and weekend opening hours.¹⁹⁵



One of three studies in the North West detect risk reduction

A handful of other early studies were also unable to show that attending needle exchanges reduced risk behaviour or prevented infection and most found that sporadic attendance was typical. The most substantial was a series conducted between 1988 and 1993 in the north west of England.⁷⁴ The first in 1988 and 1989 involved interviews with 266 primary opiate injectors contacted through drug services or by 'snowballing' to injectors not in touch with services.

Exchangers pass on used supplies

In these early days, just a third (designated the attenders) obtained most of their needles from exchanges. Among these – specifically those *not* on methadone in the past six months – there was an unexpected finding. During this period nearly half had passed on used equipment over 10 times, about twice as many as in the rest of the sample. Adjusting for other factors confirmed that the only outcome linked to attending exchanges was an *increase* the numbers who passed on used equipment. Pressure to do so arose mainly because legitimate sources were inadequate, partly because some injectors were wary of going to exchanges, and partly because exchange attenders were more accessible (eg, at night) than the exchanges themselves. Though not ideal, this trend could actually have decreased the risk of infection.^{iv 140} In any event, it was a phase which soon passed.

In contrast to attending an exchange,

being in treatment seemed protective against both receiving and passing on used equipment. Additionally, under 10% of injectors in treatment saw sharing as acceptable compared to over 20% not in treatment. These statistics might reflect the relatively energetic risk-reduction interventions undertaken by treatment staff compared to the "more low-key approach" of exchange workers.

Sociable speed users reduce risk

Later the same team checked if the situation had improved as specialist and pharmacy exchange expanded. In some ways it had. By the early '90s, attenders were no longer being pressured to pass on used syringes and, with more liberal dispensing, could 'afford' to pass on sterile equipment instead. Importantly, there was at last some evidence that attending an exchange reduced both passing on and receipt of used syringes. It came from interviews in 1990 and 1991 with 102 amphetamine injectors. None were in treatment but 40% were regular exchange attenders.

Exchanges could be expected to make an impact on these injectors which they had not made on the earlier sample of opiate injectors. They shared more often than comparable (ie, not in treatment) opiate injectors, giving more scope for reductions. They had been targeted through mobile exchanges and out-of-hours outreach, and exchanges were now more willing to hand out lots of equipment. Exchange attenders tended to form distinct and active social networks, creating

the opportunity to bring about a collective shift in risk behaviour. Pharmacists were not expected to attempt such work, giving the exchanges a potential advantage.

These efforts seem to have worked. The more regularly an injector attended, the less likely they were to have re-used another person's equipment. For example, just 3% of regular attenders had re-used over ten times in the past six months compared to 31% of non-attenders. Once other risk factors were accounted for, attending an exchange was highly significantly related to avoiding re-use of other people's equipment. Findings were similar, but less striking, with respect to passing on used equipment.

While these results were *consistent* with an impact from the exchanges (a major advance), still it could not be proved that exchanges were the active ingredient. There remained the possibility that injectors who would in any event have shared less chose to go to exchanges rather than pharmacies. There is also the reverse possibility – that the exchanges' benefits had been *underestimated* because they attracted high-risk injectors.^v

Almost back to square one

In the same region, in 1991 to 1993 interviews with 250 injectors suggested that the risk-reduction benefits of exchange use did not extend to heroin injectors, at least not to those also injecting other drugs.^{74,100} Nearly two-thirds regularly used the by now extensive exchange services. Overwhelmingly they saw them as 'user friendly'. However, over a third had re-used someone else's needle and syringe in the past six months and they were no less likely to have done so (or to have passed on used equipment) than the rest.^{vi}

Widespread secondary exchange could have obscured the benefits of directly attending the exchange. Often attenders distributed fresh equipment to other people, a practice encouraged by some exchanges and aided by policies which at each visit permitted an average 60 sets to be handed out. Some high-volume exchangers were drug dealers, and for some of these it was associated with an "educational" role *vis-à-vis* their customers.

Exchanges which handed out the most needles and syringes tended to be the ones regularly attended. Overall ease of access (not just opening hours) was also influential.

Benefits inconsistent and limited

Taking the North West studies as a whole, across two time periods when circumstances had changed considerably, heroin injectors who relied on an exchange for injecting equipment were no less likely to re-use previously used equipment than those who relied on other sources. In the late '80s the equipment flow from exchanges may have been too little to make a difference, while perhaps in the early '90s the flow from pharmacies (and from exchange attenders) and

the general awareness of risk was such that attending an exchange gave no added value.

Only among amphetamine injectors had the exchanges seemed to make a difference. We can make some informed guesses why. Though more extensive, their sharing was also a relatively 'soft' target. Around this time, other injectors were learning to restrict sharing to intimate partners – more difficult to shift than the sociable and leisure-related sharing of amphetamine injectors.¹⁰⁰ Also, the exchange's influence would stand out more because amphetamine users were unlikely to be attending other drug services.

'Not promoting behaviour change'?

Another possibility has to be faced. That disappointing outcomes in the North West were down to deficiencies in the exchanges. Concerned that "services were not maximising contact with drug users and promoting behaviour change", the region's main drug training provider commissioned research into five local exchanges.^{115,116} In 1996 and 1997 interviews were conducted with 96

visitors who had been attending at least monthly for the past three months, commonly after several years when they did not attend. Each collected on average 280 sets a month but injected just 90 times. Still, in the past four weeks six had borrowed used equipment directly from another person and eight had re-used a used syringe/needle.^{vii,199}

Sharing spoons, water and filters (not supplied by the exchanges¹⁹⁹) was the norm, often with several people commonly no closer than a casual friend. Though on average they had been in contact for three years and attended nearly twice a week, most attenders were unaware of the risks, partly because staff rarely talked about them. For each of spoons, water and filters, under a fifth recalled receiving relevant advice from any drug worker. These were *regular* attenders, so the knowledge transfer to exchange users as a whole was probably even less. Perhaps the "low-key approach" of the area's first exchanges⁷⁴ had continued into the mid-90s, or perhaps now their workload precluded anything other than a quick exchange.



Did exchanges curb the spread of hepatitis C in Glasgow?

Scottish law is interpreted as requiring a limit on the number of needles and syringes which can be supplied at any one time. In the early '90s the guideline was five on a first visit then ten on a one-for-one basis.²⁰⁰ Yet from Glasgow comes strong (but not conclusive) evidence that needle exchanges did reduce both risk behaviour and the spread of hepatitis C. Each year from 1990 to 1994 researchers interviewed city-wide samples of over 500 injectors.⁸⁶ During this period pharmacy and

specialist provision increased until virtually none of the injectors lived over two miles from an exchange. Perhaps because convenient access encouraged frequent visits, despite the quantity limit and despite injecting several times a day, they generally seem to have received sufficient for a fresh needle more or less every injection.

The analysis pooled all legitimate suppliers of needles and syringes, but exchanges were the dominant source.¹⁸⁷ Across all five annual samples, in the past six months 28%

UK equipment supply falls short of demand

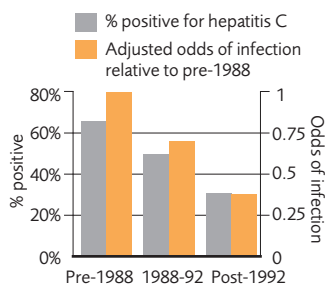
Ensuring that every time an injector wishes to inject there is a sterile needle and syringe to hand does not guarantee that these will not be shared but it does remove one of the main reasons for re-use and for sharing.^{102,118} Even a country such as Britain with unusually widespread needle exchange provision has yet to achieve this ideal.

Based on figures collected across the UK in April 1997, needle exchange schemes (pharmacy, drug service-based, standalone and others) were supplying 27.5 million syringes/needles to an estimated 86,000 to 171,000 injectors, enough to supply each with 160–320 sets a year, a fresh set daily or every other day.⁹⁹ Since twice-daily injection is the norm this amounts to between about a quarter and nearly half of the number needed for a fresh set per injection. Scotland lagged behind with just 50–90 sets distributed annually per injector and at the time Northern Ireland had no identified exchange services.

Part of the reason for Scotland lagging behind is that it had fewer exchanges per injector – based on those notified to the researchers, about one to every 130 compared to about one to every 67 in England and to every 45 in Wales.^{xiii} The extra two-and-a-half million syringes a year sold to drug injectors by pharmacies in England and Wales²¹¹ would not materially alter this picture.

Scotland's relatively limited provision reflects official restrictions. At the time Scottish Office approval was required before needle exchanges could operate and legal guidelines severely capped the quantities of equipment they could supply.²⁰⁰

In Glasgow the chances of becoming infected with hepatitis C fell when exchanges started to open in 1988 and fell further after 1992 when they were fully implemented.




of injectors who had exclusively used legitimate suppliers had re-used another injector's needle or syringe. Though still too high, this was half the proportion found among the few who had resorted to illegitimate sources. Moreover, the more equipment an injector legitimately sourced, the less likely they were to have re-used someone else's equipment. Injectors living within two miles of an exchange were also less likely to re-use.

A later analysis isolated the contribution of the exchanges, seeming to confirm that they were responsible for the gains.¹⁸⁷ Injectors who over the past six months had sourced needles and syringes from exchanges had re-used after another person on average about once every two to three weeks. The remainder had done so three times as often. Exchangers also passed on used equipment less frequently. However, neither analysis could exclude the possibility that, rather than any effect of the exchanges, it was simply that the kind of people who chose to attend them were less likely to share.

Even if there had been an effect, it still left nearly 1 in 3 attenders at risk of infection from used needles and syringes on average more than once a week and half potentially passing on their own infections to others about as often.¹⁸⁷ By 1996, despite widespread exchange services, 16% of the city's injectors had in the past month re-used syringes or needles after someone else.⁵⁸

Hepatitis C spread curbed but still rapid
Though incomplete, the sharing reductions to which exchanges probably contributed were enough to hold HIV prevalence down to 1–2% of injectors¹⁸⁷ and may have slowed the spread of hepatitis C, but not enough to stop the virus continuing to sweep rapidly through the city's injectors.

Glasgow's exchanges came fully on stream in 1992.⁵⁸ Over the same injecting career, someone who had started injecting after this watershed was a third as likely to become infected with hepatitis C as someone who had begun before exchanges started in 1988, and just over half as likely as someone who had begun during the intervening period  chart. But whether exchanges were the cause is unclear. Regardless of exchange attendance, sharing rates in Glasgow dropped between 1990 and 1991 (probably in response to anti-HIV publicity),⁸⁶ potentially

accounting for the findings.

Even after 1992, within on average just over a year of starting to inject, 36% of injectors had become infected with hepatitis C⁵⁸ – staggeringly high given the generally close proximity of exchanges.⁸⁶ New infections seem to have been generated by continued syringe and needle sharing by a minority (including exchange attenders) and probably by much more extensive sharing of equipment not routinely supplied by the city's exchanges, coupled with the high likelihood of sharing partners being infected.⁵⁸

Intervention opportunities missed

Glasgow's exchanges attracted a high proportion of the city's injectors, but in 1995 a study suggested that more could have been done with them.²⁰¹ Seven exchanges were studied, all based in clinics or health centres and staffed by nurses and drug workers. A medical examination agreed to by 112 of their visitors revealed a widespread and often severe need for medical care. All but a few had a current condition related to injecting and were aware of it, yet over the past six months three-quarters did not recall receiving health care at an exchange. Almost as



Not enough added value in London

Unmet medical need also seemed apparent in south-east London where in 1995 researchers compared four needle exchanges based in drug agencies against nine in pharmacies.^{32,203} The issue was whether the more expensive and specialised agency schemes added value. The answer was yes, but arguably not as much as they could and should have done.

Interviews were conducted with a representative sample of 280 injectors as they attended the exchanges. People interviewed at pharmacies mainly relied on these for their supplies and vice versa, so differences between them could be used to compare the two types of exchange.

In both samples equipment supply seems to have been adequate (8 in 10 normally used each syringe only once) and most interviewees were in treatment. As might be expected, sharing rates were low. Less expected was the finding that in several respects they were higher among agency than pharmacy attenders. In the previous four weeks significantly more (12% versus 5%) had shared with a close friend and in the past six months twice as many (26% versus 12%) had re-used equipment after first cleaning it, rarely an adequate safeguard.¹⁰² Many had also regularly shared spoons, water containers, and filters. On one measure, this was more common in the agency sample; in the last four weeks 49% had shared with a close friend compared to 35% in the pharmacy sample.

Some of this excess risk might have been

many had not been referred to other services and of those who had, a third did not go.

For many, exchanges were the only health facilities where they could be open about their injecting and receive medical care for its consequences. Resigned to injuries or illness as part and parcel of their lifestyles, and concerned about how they would be received, they tended to shy away from seeking treatment at other medical facilities, especially if this meant admitting to injecting while on oral methadone. Together with shortfalls in the exchange's services, this left nearly three-quarters without the medical care they needed. An earlier report on the same services found that in 1992 primary health care was provided on about 30% of visits but advice on safer injecting on just 8%.²⁰² On just 4% of occasions were visitors referred to external services such as GPs and drug agencies. Provision of social services was virtually non-existent.

Perhaps Glasgow's exchanges were a victim of their own success. Supplying equipment to large numbers funnelled into limited opening hours may have left little time for attending to anything other than the most pressing and obvious medical conditions.

due to the 'magnet effect'. Agency exchangers were more socially marginalised and had a higher risk profile. In particular, two-thirds had injected cocaine in the past year, about twice as many as at pharmacies.

Medical need remains unmet

In both groups medical problems were common and often severe. Tests showed that 3 in 4 were infected with hepatitis C and nearly a third with hepatitis B. A third had felt their drinking was out of control and many drank enough to aggravate liver disease. Over the last year a third had survived overdoses and injection-related damage was the norm.

Pharmacy exchange episodes offer little opportunity to address such problems¹⁰⁶ but more is expected of specialist exchanges. To an extent, it was delivered. For example, many more of their visitors had read health leaflets and half (compared to 1 in 10 at pharmacies) had sought advice from staff. However, the scope for more can be appreciated by looking at what was *not* done. Despite their problems, over the past year most agency visitors could not recall being referred elsewhere for help, about 60% did not remember being advised to see their GP, and over three-quarters had not seen a doctor or nurse at the agency – potentially important as many exchange attenders fail to action referrals to outside medical help.²⁰¹

Some very basic interventions were often missing. Four in ten agency exchangers had not discussed injecting with staff and nearly

half had not had their injecting sites inspected. Also missing were interventions which might have further curbed the spread of infection. Over the past year half had never received a structured intervention in the form of counselling and three-quarters had been counselled less than once every two months. Over 7 in 10 had not been immunised against hepatitis B.

Lack of opportunity was not the explanation. Visitors felt comfortable about asking for advice and appreciated the chance to chat to sympathetic staff. Usually they had attended for at least a year and each visit lasted half an hour. Yet typically over a quarter left without having had a conversation with staff – probably an underestimate as those who preferred to be quickly in and out will also have refused to be interviewed.

A limiting factor may have been the preparedness of exchange users to put up with ‘hassle’. Most cited the lack of this and sympathetic staff as reasons for attending. Staff might have feared that these perceptions would have been jeopardised by assertive intervention. On the other hand, they had a solid reserve of trust to draw on and could be expected to have the skills to intervene without alienating clients. Perhaps, too, they were prevented from doing more by factors such as workload and lack of facilities.



Access, assessment and expertise are the issues in rural Kent

An active local research unit has provided an unusual amount of data on Kent, a counterweight to studies from major conurbations. Among more dispersed populations, access is a major obstacle to exchange attendance, and avoiding recognition a prime concern of injectors unprotected by the anonymity of a metropolis. These issues interact: a local service would improve access, but might not be used because of the risk of being recognised.

Secondary exchange extends access

Research in 1993 into a drug agency-based exchange in the small town of Ramsgate found that it had provided syringes and needles for 44 injectors over three months, perhaps ten of whom had not personally visited.²⁰⁴ Each was supplied on average every three weeks. Amphetamine was the most commonly injected drug, so the maximum of 50 syringes per transaction could have been enough for a fresh one each time.

As in the North West,⁷⁴ amphetamine injectors formed a cohesive social network, fertile ground for peer education and secondary exchange. Indeed, many attenders collected for other people and promoted safer injecting messages absorbed at the exchange.

Those with stocks at home were also called upon when the exchange was closed. These indirect services were important. Injectors were deterred from directly attending by concerns over being recognised, their names being leaked to police, and police attention when carrying syringes. Just getting to the exchange was a problem. Intoxication does not lend itself to driving nor to planning and executing extended or complicated journeys. Injectors with more convenient access were the ones most likely to attend.

The friendly and non-judgemental attitude of staff was valued by visitors but it was not enough. Several felt the need for a more knowledgeable and detailed dialogue about injecting-related risks. There was no formal or routine assessment of each new visitor's risk profile. Some staff lacked confidence in their abilities to make such assessments and to offer consequent advice, and for some it seemed antithetical to their other roles as counsellors.^{viii}

Elsewhere in Kent, the thorough infection risk investigation entailed in research into pharmacy schemes¹⁹⁴ was valued by most participants who felt it had improved their awareness of risk, an echo of findings in Amsterdam.¹⁸⁴ A substantial minority were

Policy catches up with the epidemic

Until recently UK national policy gave little guidance on what priority to attach to hepatitis C and how to deal with it.²¹² In 1999/2000 nearly two-thirds of English drug action teams had yet to plot a strategy for the virus.^{213 214} In contrast, in 2001 the Scottish Executive declared exchanges “vital” to combating infection and committed itself to reducing by a fifth the proportion of injectors testing positive for the virus by 2005.²¹⁵ The same year in England more urgency became apparent when the Department of Health issued guidance on hepatitis C for people working with drug users.⁷

National strategy highlights exchange At last, in summer 2002 a long campaign⁹ bore fruit in a new English strategy for containing hepatitis C.⁶ It spotlights needle exchange as having a “key role” and cites research indicating that “the greatest practical impact” in preventing transmission of the virus will come from “improving the provision of needle exchange services”.

At its most basic the strategy calls for geographical gaps in needle exchange to be monitored and for progress to be made on eliminating them. Exchanges are also likely to be important vehicles for implementing the strategy's calls for campaigns to prevent sharing of injecting equipment other than syringes and needles, for user involvement in planning initiatives, for expansion of outreach and peer education services, for hepa-

titis B immunisation to be available in all drug action team areas, and for improved treatment uptake. In the absence of reliable data on incidence, the proposed national target is “A reduction in the prevalence of hepatitis C in injecting drug users who started to inject in the last 3 years”, a rough proxy for how rapidly the infection is spreading. In turn this target focuses attention on newer and (usually) younger injectors which exchanges have done least well in attracting and retaining. The policy is welcome but action has yet to follow.²¹⁰

New service framework

Also in 2002 the English drug service framework developed by the National Treatment Agency included guidelines for exchanges.²¹⁶ Among these are a requirement for drug action teams and commissioning groups to ensure “comprehensive coverage”. Fixed-site specialist exchanges will be expected to employ nurses to inspect injecting sites and to deal with minor infections and dressings, and to train their staff to provide health checks.

All exchanges are expected to provide harm reduction advice and facilitate access to hepatitis B immunisation, HIV and hepatitis counselling and testing, drug treatment, and interventions to prevent or reducing injecting. Much of this hinges on first assessing the risks run by their visitors. The guidelines say specialist exchanges should normally assess at the first visit and then repeat to

ensure that advice remains relevant. Exchanges are also expected to periodically mount harm reduction campaigns. In addition to basic caseload statistics, records may be required of sharing behaviour, new attendances, referrals to treatment, and per client costs.

Supply restrictions relaxed

From August 2003 the law which banned supply of injecting equipment other than needles and syringes was relaxed to permit provision of water ampoules, swabs, utensils such as ‘cookers’ used for preparing drugs, filters and citric acid, by medical practitioners, pharmacists and people engaged in drug treatment including needle exchange workers.²¹⁷ Though a great advance on the previous situation, the impact of the new law will be hampered by limitations including the prescription-only status of water for injection and the continuing illegality of peer distribution of these items. Perhaps the main limitation will be the willingness of funders to pay for the new equipment.

In Scotland needle exchange users received a welcome 2002 Christmas present from the Lord Advocate who raised the legal limits on the number of needles/syringes that can be issued at any one visit. The limits are now 20 on the first visit and 60 on subsequent visits, or 120 in exceptional circumstances such as at holiday periods or when facilities are closed or difficult to access.²¹⁸

prompted to consider moves such as hepatitis C testing and changing to safer injecting. Just such an assessment was missing not just in

Ramsgate but probably too at most other exchanges. The upshot must have been that chances to reduce risk were being missed.

in its impact on their behaviour.

In 1998 a dramatic increase in recorded hepatitis B infections in a Scottish city^{xii} prompted a study of its specialist exchange.²⁰⁹ Over the four years from 1995 each exchange client had attended on average 13 times and within each year just 6–7 times, yet two thirds injected daily. Infrequent attendance plus legal caps on equipment supply meant most could not have used their own fresh equipment each time.^{xiii} As in Malmö,⁶¹ supply shortfalls from the exchange could not be made up from elsewhere because it was the main legitimate local source. Also as in Malmö, long gaps between visits together with strict one-for-one return requirements may have risked infection spread by extending the interval used equipment was kept in circulation, and limits on supplies would also have stopped attenders passing sterile equipment to their contacts.



Despite exchanges risk levels can remain high

A patchwork of other studies confirm that risk behaviour can continue at worryingly high levels despite the presence of needle exchanges. In microcosm, a report on an exchange in Sheffield in 1988–1989 confirmed the national picture.²⁰⁵ The new exchange had trouble attracting women and younger injectors and even more trouble turning these into regular attenders.^{ix} A mission to educate visitors about HIV was rapidly replaced by a simple exchange transaction which left misconceptions uncorrected. Most worrying, 28% of attenders had shared injecting equipment in the past four weeks.

Unusually, in 1987 a scheme in Cambridge was sited at a drug dependence treatment clinic.¹⁸⁸ Nearly half the patients used it but sporadically, averaging under two visits in six months. Many lived outside the city and were not prepared to travel to the exchange, and opening hours were seen as too restricted. A quarter of the patients had recently shared injecting equipment. Attenders were no less likely to have done so than non-attenders

Sporadic attendance averaging once every few months typified two exchanges in the Bath and Swindon areas.²⁰⁶ As in Cambridge, concern over unwelcome police attention deterred some would-be users. Others had simply not heard of the exchange or would have responded better to an outreach service. Also in south-west England, a recent study which included needle exchanges among its sampling frame found that in the past month 40% of injectors had shared syringes and needles and 85% had shared other injecting equipment.^{96,207}

In the same region, in the mid-90s a study focused on a city-based drug agency exchange which also coordinated the pharmacy scheme, facilitating dual use and transfer from one to the other in response to need and giving injectors confidence in the pharmacies.¹⁰⁶ But all was not well. Injectors knew the risks of sharing needles and syringes but still did so with close friends and when equipment had been ‘cleaned’, and sharing of spoons and filters was common. Over 80% of some local samples of injectors were infected with hepatitis C. The agency exchange gave individualised risk reduction advice but this must have been very limited. During the three hours it was open it often saw over 60 people. When detailed assessment or counselling was undertaken other callers had to kept waiting, a deterrent to re-attending.¹⁸⁹ As elsewhere, typically visitors had been injecting for years; new injectors

were not being picked up soon enough.

A community drug team needle exchange in Worcestershire^x provided filters and sterile water as well as needles and syringes but this did not stop them being shared.²⁰⁸ Though most knew this posed a risk, most attenders had shared water and filters with someone else (often regularly) and were prepared to do so again. As a result, nine in ten were at appreciable risk of infection. The information flow from the exchange seemed inadequate both in terms of the proportion of users advised about risks (only a third recalled being warned about sharing water) and

Solid foundation but it needs to be built on

In trying to make sense of this evidence we must remember that British research is patchy, precluding strong conclusions, and that needle exchange is one element of a complex system which is extremely difficult to disentangle. Failure to detect a positive impact does not mean this does not exist.

The ‘magnet effect’ can hide benefits (▶ part 2) and so too can the fact that exchanges may foster risk reduction across entire injecting populations, obscuring their specific contribution when attenders are compared to non-attenders, the typical paradigm.

The mechanisms are both practical and symbolic. By pumping sterile equipment into circulation and removing contaminated material, exchanges reduce the likelihood that any given piece of equipment – in the hands of an attender or not – can spread infection. Exchanges can relieve pharmacists of the most demanding injectors, probably making them more willing to meet remaining demand, and many encourage secondary exchange. By demonstrating how seriously the threat is being taken, and by showing concern for injectors beyond an insistence that they stop injecting, exchanges also lend credibility to anti-sharing messages. Once an exchange is up and running in an area, one defence against acting on these messages (‘I know I shouldn’t share but I can’t get needles’) is removed and sharing is exposed as irresponsible rather than unavoidable.

‘Limited overall effect’ of first schemes

Given these caveats, what can we make of the early work in Britain, still the most detailed we have? These new services, wary of frightening off jittery customers, were concerned not to over-force the pace of risk-reducing behaviour change – and there is little evidence that their customers *did* change more

than they would have done anyway. On the plus side, they attracted committed injectors who would not otherwise have been in a position to be offered risk-reduction advice. Where such treatment could be had, exchanges acted as a route to methadone prescribing and in particular to injectable methadone, which reduced sharing levels. They also acted more broadly as a conduit to advice and treatment. However, the core exchange function could not be shown to have reduced HIV risk.

From the team at the Centre for Research, the verdict was that where (as in England) there is in any event good access to injecting equipment, sharing levels are already low, and HIV infection rare, “syringe-exchanges have only a limited overall effect on further reductions in syringe-sharing”.¹⁹⁵ The qualifications to this verdict are important. Dundee showed that where there are few alternative sources, closing needle exchanges makes equipment hard to obtain and results in pre-AIDS levels of sharing.¹⁸⁹

Their prescription was for exchanges to extend their work.¹⁰⁴ Attenders should be equipped with the social skills needed to resist risky injecting and supported by more attention to their material, physical and psychological well-being. They should also be recruited as secondary distribution points and as peer educators. More exchanges and diversification of supply would help reduce equipment shortages. Access to substitute prescribing and particularly to injectable methadone would enable exchanges to make the most of their contacts with opiate addicts. Access to effective treatments for stimulant injectors might also help reduce HIV risk. These messages remain relevant. The difference now is that we have a solid foundation of experience and credibility to build on.

Glimmers of light from later work

Of the later studies, it may be no accident that the best evidence that exchanges reduce hepatitis C infection risk comes from Glasgow, which hosted a long-term, consistent research programme. Had such work been done elsewhere, we might have found similar results. It may also be no accident that Glasgow's exchanges achieved near saturation levels of needle/syringe distribution across the entire city; for exchange, coverage is, if not everything, close to it. Yet even here the exchanges cannot be shown to have been the active ingredient and hepatitis C continued to sweep rapidly through the city's injectors.

The other short-lived glimmer comes from the north west of England where circumstances combined to isolate the effect of exchanges from that of other outlets and from treatment services, while at the same time delivering a set of customers particularly amenable to change. This peculiar constellation of factors rendered visible a direct effect of exchanges on their visitors which may have been obscured elsewhere.

Elsewhere or at other times the story is of residual levels of needle/syringe sharing and widespread sharing of other equipment which exchange attendance cannot be shown to have dented. Beyond research limitations, the possible reasons for limited evidence of success fall into two strands. The first is the restrictions which hobbled exchange in the case study cities, restrictions present (usually to a lesser degree) in Britain. These are most obvious in the legal quantity limits in Scotland but also in restricted opening hours and inadequate staffing and facilities, and in cost constraints which ignore the long-term costs of unaverted infection.

The second may be curbs on the degree to which exchanges engaged with their customers to safeguard health, improve functioning, and reduce their risks of contracting or transmitting infection. Such curbs were imposed by resource limitations but perhaps too were partly self-imposed, grounded in the concern of the early exchanges not to deter injectors who had yet to be convinced that the new services were 'on their side'. There are signs that this concern unduly limited the extent to which exchanges exploited the reservoir of trust they had built up and the experience and skills of their staff to make greater gains. Though the research is not there to document their work, in recent years many exchanges have embraced a more activist agenda^{xiv} and more would if the resources were available. Which initiatives they might look to is the subject of the next and final part of this series.

NOTES

- i The accepted term though in the UK strict exchange is rarely enforced and some schemes see themselves as primarily in the business of supplying sterile needles and syringes (Richard Velleman, personal communication November 2003; UKHRA mailing list postings 2003).
- ii When only skeleton information on each attender was collected on intake sheets.
- iii Not only had the *AIDS* article chosen a different comparator, it also seemed to deny the existence of this alternative benchmark: "Resources did not permit follow-up of subjects and different people were interviewed."
- iv Exchangers' second-hand needles were in demand because often they been used just once and were sharper. Without them, non-attenders might have had to resort to equipment with a longer track record and more likely to be contaminated.
- v More attenders injected heroin and there may have been other, undocumented risk-elevating influences which the exchanges had successfully countered.
- vi Again, the 'magnet effect' may be implicated, though the analysis did account for the frequency of injecting.
- vii Degree of overlap between these categories not known.
- viii Some may have felt that locally restricted access to

treatment (probably especially acute for stimulant users) meant assessment for these purposes was pointless.

- ix Instability in injecting and drug use patterns accounted for some of this irregularity.
- x Investigated probably in the late '90s,
- xi Almost certainly Aberdeen.
- xii To do so each would need to have taken on average 70 needle/syringes each visit instead of 18 in 1998.
- xiii Estimates assume mid points of ranges of number of injectors in each country.
- xiv To judge by reports to their national forum.

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OFFCUTS

Screening primary care patients for risky drinking is an ineffective use of health care resources was the conclusion of study published in the *British Medical Journal* at a time when a World Health Organisation project is seeking to persuade GPs to do just that. The conclusion was based on a meta-analytic compilation of relevant studies.¹ From this emerged an estimate that on average 1000 patients have to be screened to gain 12 months later just two or three who have stopped drinking above levels which the study defined as excessive. The main problem was not the efficacy of brief interventions but 'wastage' before patients got to this point: across the studies, screening indicated that 90 out of 1000 patients might be drinking too much and just 25 of these were assessed as suitable for and actually received an intervention.

Critics argued that outside a research context more of those who screened positive would have been talked to about their drinking, that drinking reductions which don't fall below excessive may still be valuable, that alcohol screening could be incorporated in broader health screening, and that screening does not have to be universal – it could be targeted at categories of patients likely to include heavy drinkers or at specific types of consultations. Finally, it was argued that even accepting the meta-analysis's estimates, screening for alcohol problems is no more hit and miss than screening for other medical conditions for which it is considered worthwhile. The authors replied sticking by their conclusions. They argued that the proportion of positive screen patients who actually receive a brief intervention is likely to be roughly the same in normal practice as in the research, that selective screening is untested in general practice, and that what is needed is a study comparing screening-based approaches with normal patient-centred clinical procedures.

¹ Beich A. *et al.* "Screening in brief intervention trials targeting excessive drinkers in general practice: systematic review and meta-analysis." *British Medical Journal*: 2003, 327, p. 536–542. For this study and responses to it see <http://bmj.bmjournals.com>.