Effective Interventions Unit

Hepatitis C: Risks and prevention strategies in injecting drug users

Research Review

WHAT IS IN THIS REVIEW?

- Information on the hepatitis C virus and routes of transmission.
- The scale of the problem among injecting drug users in Scotland.
- An overview of possible prevention strategies.

WHAT IS THE AIM?

To examine current knowledge about HCV among injecting drug users and possible prevention strategies. The paper draws heavily on the published literature and work conducted by the Scottish Centre for Infection and Environmental Health (SCIEH), the Centre for HIV and Drug Studies (CHADS) and the Health Education Board for Scotland (HEBS) in a practical, readable document.

WHO SHOULD READ IT?

Anyone involved in commissioning, planning, developing and delivering services for drug users aimed at the prevention of the transmission of HCV.

WHO PREPARED THE REVIEW?

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CONTENTS

KEY FINDINGS

- Hepatitis C is a slow progressing disease of the liver spread by blood and blood stained body fluids.

- There are a number of ways in which the hepatitis C virus can be spread. These include injecting drug use, transfusion of contaminated blood, treatment with contaminated blood products, tattooing, electrolysis and body piercing, needlestick injury, perinatal transmission (from mother to baby) and sexual transmission.

- Injecting drug use is the most common risk factor for the hepatitis C virus (HCV). Transmission is linked to the sharing of injecting equipment.

- Approximately 80% of those infected develop chronic hepatitis C, but may be without symptoms for many years.

- A combination therapy of interferon alpha and ribavirin is currently recommended by the National Institute for Clinical Excellence (NICE) for the treatment of moderate to severe hepatitis C.

- Prevention measures introduced to tackle HIV among injectors appear to have been less effective in containing the spread of HCV when compared to HIV.

- By June 2001 there were 12,680 known cases of hepatitis C antibody positive in Scotland. Of these, 60% were known to have injected drugs.

- The estimated number of HCV infected current injectors in Scotland is 10,000. In addition to this, there is an unknown number of HCV infected past injectors.

- Scottish drug users continue to inject and to share their injecting equipment. In 2000/01 over one third of current injectors in contact with services reported that they had shared injecting equipment in the previous month.

- Prevention approaches can be designed to reduce the number of injectors in a population. Examples include ensuring access to effective drug treatment, preventing initiation into injecting and promoting a move away from injecting to smoking.

- Prevention approaches can also be designed to reduce the sharing of injecting equipment by ensuring access to needle and syringe exchange facilities, ensuring access to sufficient numbers of needles and syringes and by providing wider injecting paraphernalia (e.g. citric acid, water, filters and spoons).

- Prevention approaches can also aim to improve knowledge of HCV and the risk factors by providing education and training to injectors, drug using peers and to service providers. Such approaches include peer education and staff training.

- Overall, a strategy to prevent the spread of HCV should clearly not rely upon one of the above approaches, but should tackle the problem in a range of ways, with a combination of interventions.

CHAPTER 1 INTRODUCTION

Hepatitis C is a **slow progressing disease of the liver** spread by blood and blood stained body fluids. Disease progression is variable. Antibodies to the hepatitis C virus (HCV) develop several weeks after infection and usually persist through an individual's life. Around 15-20% of infected persons clear their infection spontaneously. The remaining 80-85% will become carriers of the virus. There is currently no vaccine to prevent HCV.

Chronic hepatitis C can lead to cirrhosis, liver failure and liver cancer. Estimates suggest that 20% of HCV infected individuals will have developed cirrhosis of the liver after 20 years of infection (Scottish Needs Assessment Programme 2000). Interferon alpha and ribavirin as a combination therapy is currently recommended by the National Institute for Clinical Effectiveness (NICE) for the treatment of moderate to severe hepatitis C. This treatment usually lasts for 6-12 months. A cessation of injecting drug use is usually recommended before treatment can begin. Further, treatment is not recommended for heavy alcohol users because of the increased risk of liver damage.

So, approximately 80% of those infected develop chronic hepatitis, but they may be without symptoms for many years. This means that many individuals **may not be aware that they carry the disease** until liver disease is well advanced. For instance, infection is sometimes detected incidentally when donating blood. This means that the potential to transmit the virus to others exists, but carriers may be unaware of the risk they pose.

There are a number of ways in which infection can be spread. These include:

- treatment with contaminated blood, prior to the introduction of blood donor screening in 1991
- treatment with contaminated blood products, prior to the introduction of virus inactivation in 1987
- tattooing, electrolysis and body piercing, if equipment is contaminated and inadequately sterilised
- needlestick injury
- perinatal transmission (from mother to baby)
- sexual transmission.

However, **injecting drug use is the most common risk factor for HCV.** Transmission is linked to the sharing of injecting equipment. The principles of HCV prevention have been largely the same as for other blood borne viruses. Indeed, HIV prevention measures are likely to have had an impact on the transmission of HCV including methadone prescribing and needle exchange schemes.

However, these strategies appear to have been **less effective** in containing the spread of HCV when compared to HIV (Van Beek et al 1998; Coutinho 1998). There are three main reasons for this. Firstly, a pool of HCV infection was probably established in the injecting population before harm reduction

strategies were widespread. Secondly, the virus may be able to survive longer outside the body, including on injecting equipment. Thirdly, individuals with chronic HCV may be more infectious for longer periods than those individuals with HIV.

A recent study that tested for the presence of HCV RNA from injecting equipment supports the call for provision of a **wider range of injecting equipment** (Crofts et al 2000). This Australian study suggests that the sharing of injecting paraphernalia (other than just needles and syringes) represents a risk to health. HCV was found on swabs, filters, water samples and spoons.

The problem of HCV among injecting drug users is well recognised and there is a commitment to tackling HCV as part of the National Drugs Strategy. One of the **national drugs targets**, published in 2000, seeks to 'reduce the proportion of injecting drug users sharing needles and syringes by 20% by 2005, and reduce the percentage of injecting drug users testing antibody positive for hepatitis C by 20% by 2005'. There is also a target on reducing the proportion of drug misusers who inject by 20% by 2005.

This review presents data on the scale of the HCV problem among injecting drug users in Scotland and sets out the range of prevention approaches using examples from the HCV field. The review draws on information and research evidence from the Scottish Centre for Infection and Environmental Health (SCIEH), the Centre for HIV and Drug Studies (CHADS), the Health Education Board for Scotland (HEBS) and the international research literature.

CHAPTER 2 THE SCALE OF THE PROBLEM

This chapter sets out information on known cases of HCV and estimates of HCV infection among injecting drug users in Scotland. by NHS board area. It also examines the evidence for a decrease in the prevalence and incidence of HCV among injectors and trends in the sharing of injecting equipment among injectors.

1) Surveillance of known hepatitis C antibody positive cases

The Scottish Centre for Infection and Environmental Health (SCIEH) and principal hepatitis C testing laboratories throughout Scotland have established a database of persons diagnosed hepatitis C antibody positive.

As at 30 June 2001 there were **12,680 known cases** of hepatitis C antibody positive in Scotland. Of these, 7,570 (60%) were known to have injected drugs[1]. For 4,209 cases (33% of the total) there was no risk information available. Three quarters of these individuals (75%) were aged between 15 and 44, the age range that most injectors belonged at the time of testing. Therefore, it is likely that many of these individuals acquired their HCV through unsafe injecting practices (Table 1). Over one third (37%) of the total known cases in Scotland were resident in Greater Glasgow, 15% in Lothian, 12% in Grampian and 8% in Tayside. A breakdown of cases by NHS boards is available in the SCIEH Weekly Report of 12th February 2002 at http://www.show.scot.nhs.uk/scieh/PDF/pdf2002/0206.pdf

Table 1. Persons reported to be hepatitis C antibody-positive, by probable/possible route of transmission[1] and age group, (to 30 June 2001)

Age	Injecting drug user	Blood factor[2]	Other[3]	No information	Total
Under 15	1	31	16	16	64
15 – 19	351	28	11	102	492
20 – 24	1495	37	41	468	2041
25 – 29	2160	45	85	790	3080
30 – 34	1806	48	105	784	2743
35 – 39	966	30	93	587	1676
40 – 44	431	37	78	432	978
45 and over	229	81	126	889	1325
Not known	131	3	6	141	281
Scotland	**7 570**	**340**	**561**	**4 209**	**12 680**

1 Risk group identified at time of earliest positive specimen.
2 Persons who acquired their hepatitis C infection in Scotland through blood factor will have become infected prior to the time, in the mid-1980s, when heat treatment was introduced to eradicate bloodborne infections.
3 Includes sexual contact, body piercing/tattoo, needlestick, bite, blood spillage, blood transfusion, or perinatal risk.
Source : The Scottish Centre for Infection & Environmental Health (SCIEH) - Hepatitis C register.

[1] Information on risk behaviour, such as current or previous injecting drug use, is recorded on the laboratory request forms accompanying the blood specimens for diagnostic testing.

2) Unlinked anonymous HCV testing surveys of injectors

To determine the extent of HCV infection among injecting drug users, SCIEH, in association with HCV testing laboratories, co-ordinated a programme of unlinked anonymous HCV antibody testing of residual sera from injectors who had undergone a named HIV test. SCIEH holds anonymised epidemiological data on all persons who had a named HIV antibody test in Scotland since 1989. From these data it is known that there were 2,141 injecting drug users in Scotland who underwent named HIV antibody testing in 1999-2000 and had sufficient serum left for HCV testing. Of these, 946 (44%) were found to be HCV antibody positive .

The highest HCV prevalence rate was found among injectors in Greater Glasgow (62%), followed by Tayside (53%). Rates ranged from 23%-41% among injectors in the other NHS board areas. Data were unavailable for Borders and Island NHS boards as so few injectors presented for HIV testing in these areas. These data are presented in the first column of Table 2.

3) Community-wide surveys of current injecting drug users

Community–wide surveys of current injecting drug users are **another source** of prevalence data. These surveys have been conducted in Scotland since 1990. Subject to consent, the studies involve recruiting representative samples of persons who have injected drugs, interviewing them about their risk behaviour and asking them to supply a saliva sample for anonymous testing for HCV antibodies.

The three most recent studies (in Greater Glasgow in 1999, Lanarkshire in 2000 and Highland in 2000-2001) found HCV prevalence rates of 23% in Lanarkshire, 45% in Greater Glasgow and 46% in Highland. Note : the Greater Glasgow study was based on injectors who had commenced their injecting careers since 1990, whilst the other two studies included injectors with longer injecting careers, as well as more recent injectors. Detailed findings of these 3 local community-wide surveys are available from SCIEH.

4) Estimates of HCV infection among current drug injectors in Scotland

The national drug prevalence study, published in November 2001, provided **estimates of the number of HCV infected current injectors** (Hay et al 2001). These estimates were produced by combining the HCV antibody prevalence data for injectors who underwent HIV testing in 1999-2000 with the prevalence study's own estimates of the number of current injecting drug users.

These data on HCV prevalence, together with the estimated number of current drug injectors, the estimated number of HCV infected current injectors and the corresponding population prevalence rates are presented at NHS board area level in Table 2. The researchers produced an overall estimate of **10,000 HCV infected current injectors in Scotland**. The 95% confidence interval attached to this

estimate gives a range of 8,500 to 12,900. Sufficient data were not available in the Island NHS board areas nor in Ayrshire & Arran or Borders.

Table 2. Estimates of HCV infection among injecting drug users, by NHS board area

NHS Board	Anti-HCV prevalence among injectors from HIV testing [1]		Estimated number of current drug injectors [2]		Estimated number of HCV infected current injectors [3]		Estimated population prevalence of HCV infection [4]	
	%	95% CI	N	95% CI	N	95% CI	%	95% CI
Argyll & Clyde	31	19-42	2,138	1,601-2,990	663	368-1,052	0.29	0.16-0.45
Dumfries & Galloway	28	17-40	462	350-644	129	72-213	0.18	0.10-0.29
Fife	29	20-39	866	473-1,913	251	105-584	0.13	0.06-0.30
Forth Valley	23	10-35	838	635-1,155	193	81-334	0.13	0.05-0.22
Grampian	38	33-42	4,290	3,033-7,744	1,630	881-2,954	0.55	0.30-0.99
Greater Glasgow	62	58-66	7,187	6,085-8,615	4,456	3,676-5,397	0.86	0.71-1.04
Highland	31	22-40	216	55-3,385	67	4-1,030	0.06	0.00-0.93
Lanarkshire	41	32-50	2,369	1,281-5,289	971	414-2,193	0.31	0.13-0.69
Lothian	36	31-41	3,149	1,730-6,938	1,134	510-2,530	0.25	0.11-0.55
Tayside	53	45-60	942	464-2,491	499	185-1,306	0.24	0.09-0.64
SCOTLAND [5]			**22,800**	**15,830-43,030**	**10,000**	**8,500-12,900**	**0.39**	**0.33-0.50**

1 Attributable anti-HIV testing during 99-00 were tested anonymously for anti-HCV (unlinked anonymous surveys)
2 Estimates and confidence intervals derived using the capture-recapture method
3 Estimates produced by combining estimates in 1 and 2
4 Prevalence rates expressed as a percentage of the population aged 15 to 54
5 As five NHS boards have been omitted, the columns cannot be summed to provide Scottish estimates

5) Estimates of HCV infection among past drug injectors in Scotland

As described above, there are an estimated 22,800 current injecting drug users in Scotland, of whom an estimated 10,000 will be HCV antibody positive. In addition, **there is an unknown number of people who do not inject currently, but have injected drugs in the past**, and may, therefore have acquired hepatitis C infection through injecting behaviour. We do not as yet have enough information on which to make any meaningful estimate of the number of HCV infected past injectors in Scotland, however this work is currently ongoing at SCIEH.

6) Evidence of a decrease in the prevalence and incidence of HCV among injectors?

There is evidence that the prevalence and incidence of HCV among injectors has decreased during the era of harm reduction (Goldberg et al 2000). The unlinked anonymous HCV testing surveys of injectors are one indicator of this, with prevalence rates falling from 62% in 1997 to 44% in 1999-2000. The most recent community-wide survey in Glasgow, in 1999, found a drop in HCV prevalence among recent injectors (i.e. injecting < 2 years). The transmission rate (or incidence of infection), however, remained high at around 28% within the first two years of injecting (Taylor et al 2000).

7) Rates of sharing of injecting equipment among current injectors

Drug users continue to inject and to share their injecting equipment. Information from the Scottish Drug Misuse Database, based on new problem drug users in contact with services, points to an increase in levels of sharing among current injectors over the last five years.

In 2000/01 over one third (34%) of current injectors reported that they had shared injecting equipment in the previous month, compared with 28% four years previously. In addition to the 34% reporting recent sharing behaviour, a further 27% reported that they had shared in the past, although not in the previous month (Table 3). More detailed sharing statistics, for NHS board and council areas in Scotland, are available in the latest Drug Misuse Statistics Scotland publication at:
www.drugmisuse.isdscotland.org/publications/abstracts/drugstats2001.htm

Data from the 1990-1994 and 1999 community-wide surveys of Glasgow injectors also show a significant increase in needle and syringe sharing between 1992 and 1999 (Taylor et al 2001).

Table 3. Sharing status of current injectors[1] (1996/97 – 2000/01)

	1996/97	1997/98	1998/99	1999/00	2000/01
Total number of current injectors	2,935	3,215	3,489	3,958	3,971
Sharing data available (=100%)	2,327	2,609	2,793	3,014	3,131
Shared in previous month (%)	28	28	34	34	34
Shared in past, not in previous month (%)	28	26	27	26	27
Never shared (%)	44	46	40	40	38

1 Individuals reported to have injected drugs 'in the previous month'
n.b. All figures in this table exclude penal establishment inmates and information received from needle exchanges.
Source : Scottish Drug Misuse Database

Findings from the database Outcomes Pilot Study, in 1998/1999, point to **higher sharing rates** than those presented above (Galbraith et al 2001). Up until April 2001, the database monitoring form simply asked whether the client had 'shared injecting equipment in the past month?'. For the purposes of the

outcomes pilot a revised monitoring form was developed which distinguished between the sharing of 'needles and syringes' and the sharing of 'spoons, filters and water' (injecting paraphernalia).

The outcomes pilot found sharing rates of 31% for needles and syringes and 58% (almost double) for spoons, filters and water, based on new clients in contact with services. The 31% of current injectors reporting sharing of needles and syringes was similar to the percentage recorded on the Scottish Drug Misuse Database in 1998/99 using the terminology 'sharing injecting equipment'. This suggests that many drug users consider sharing to be the joint use of needles and syringes only. The revised database monitoring form, the SMR24, introduced in April 2001, now has separate questions on sharing of needles and syringes and sharing of wider paraphernalia.

CHAPTER 3 PREVENTION STRATEGIES

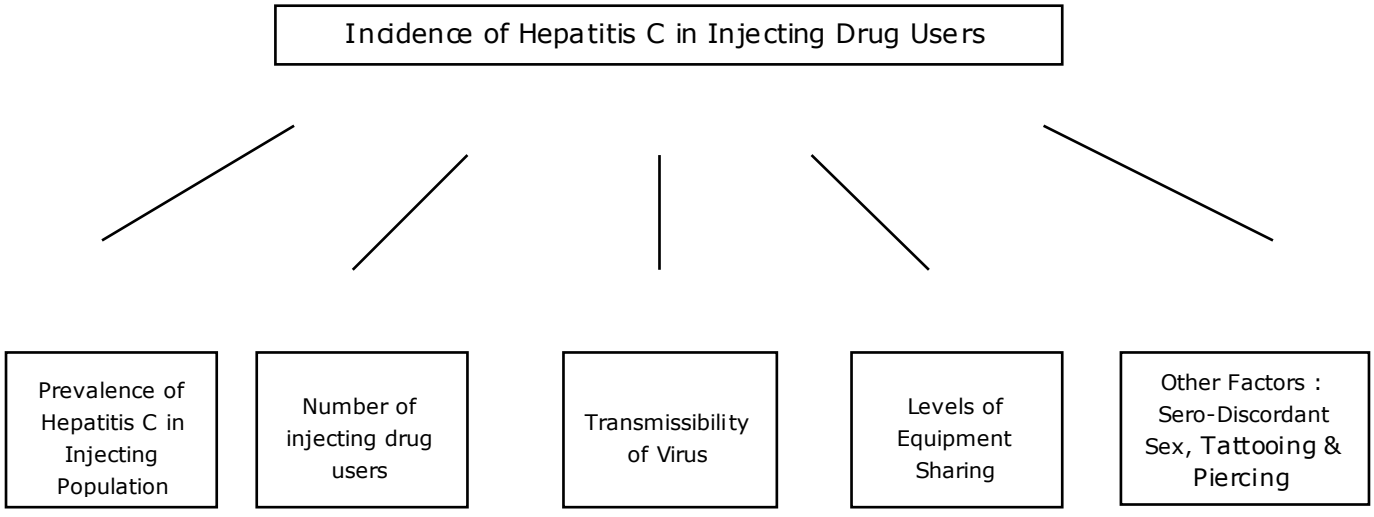
A FRAMEWORK FOR PREVENTING HCV TRANSMISSION (CHADS)

Hepatitis C can be described as a 'behavioural disease'. The transmission of HCV is largely dependent on the way affected injectors interact with the environment. Therefore, in order to prevent its transmission, we first need to understand the dynamics of this interaction at an individual, social & environmental level.

As part of a literature review conducted in 2001, the Centre for HIV and Drug Studies (CHADS) at Lothian NHS Board devised a framework to help examine the interaction between the prevalence of HCV, the number of injectors, the transmissibility of HCV, levels of equipment sharing and other risk factors.

The figure below illustrates the factors that influence the incidence of hepatitis C among injecting drug users. For example, the framework clearly shows that the incidence of HCV in injectors is in part a function of how many injectors there are in a population and how many of these injectors are HCV carriers. The transmissibility (i.e. how easy the virus is to transmit) of the virus and levels of equipment sharing are also important factors.

FIGURE 1. A FRAMEWORK FOR PREVENTING HEPATITIS C



When designing and implementing prevention strategies it is important to understand these factors in the population served by these strategies, and to monitor the change in these factors over time. For example, by being aware of the number of injectors in your area and levels of equipment sharing.

PREVENTION MEASURES

There are a **wealth of prevention measures** that can potentially impact on the incidence of HCV among the injecting population. Most of these target the number of injecting drug users and the levels of equipment sharing. These are set out below. Overall, there are varying levels of research evidence on the effectiveness of these approaches. What is clear is that a strategy to prevent the spread of HCV should not rely on one of these approaches, but should tackle the problem in a range of ways, using a variety of interventions.

Further, some of these interventions may not be implemented with HCV prevention as a primary aim, but it may be one of a **range of outcomes** that an intervention can deliver. For example, providing access to effective drug treatment may have the primary aim of reducing illicit drug use, but may help prevent the spread of HCV if this reduced risky injecting behaviour. Harm reduction measures aimed at reducing the sharing of injecting equipment were introduced in the 1980s and 1990s primarily to prevent the spread of HIV.

REDUCING THE NUMBER OF INJECTORS

1) Access to effective drug treatment

The **availability and accessibility of effective drug treatment** is key to reducing the number of injecting drug users. Treatment can include both residential and community based treatment and both substitute prescribing and abstinence based approaches. The National Treatment Outcome Research Study (NTORS) in England and Wales shows that those in residential treatment and those in community methadone programmes experienced improvements in drug use after one year. These improvements are largely maintained at 2 years and at 4-5 years. Reductions were found in both the percentages using drugs, and in the frequency of illicit drug use (see www.ntors.org.uk/bulletin5.htm). Further, rates of injecting, and of sharing injecting equipment were substantially reduced at one year follow-up and remained low throughout a five year period. The aforementioned Outcomes Pilot Study (Galbraith et al 2001), conducted at five drug treatment services across Scotland, identified reductions in illicit drug use, injecting and sharing after three months. Similarly, a systematic review of methadone maintenance therapy (MMT) showed a significant relationship between MMT and reduction of illicit opiate use and a significant relationship between MMT and a reduction in HIV/HCV risk behaviours (Marsch 1998). Overall, the evidence suggests that the provision of effective drug treatment should help reduce the number of injectors and reduce the risk of hepatitis C.

2) Preventing initiation into injecting drug use

The factors that drive non-injecting drug users to start injecting are not very well understood. Research suggests that the decision is probably based on a **combination of factors** including: the type and quality of available drugs, economic motives (injecting is usually more cost effective) and a curiosity about the effects by injection. Further, the most common scenario for initiation appears to be one in which injecting was unplanned (Crofts et al 1996; Hunt et al 1999). In the Australian study of initiation, most respondents identified a significant other who initiated them, and over half had subsequently initiated others into injecting. Developing interventions to discourage current injectors to initiate non-injectors into injecting is thought to be the most appropriate way of tackling this problem, principally because potential injectors can be difficult to identify and to contact (Hunt et al 2001). To address this, a new initiative called 'Break the Cycle' has been developed in England for workers in contact with injectors. These materials have been adapted for Scottish use, as a component of the Drugs Communications Strategy, and are available from Helen Phillips at Exchange Campaigns (tel : 01305-215-802). This (and similar) interventions should also help to reduce the number of injecting drug users, and thus the risk of HCV.

Example: Break the Cycle

Break the Cycle is an information campaign aimed at encouraging current injectors to avoid injecting in front of non-injectors, avoid discussing the benefits of injecting in front of non-injectors and by giving people the skills and strategies to resist requests to give someone their first hit.

The work is based on a previous intervention carried out by Hunt et al (1998 & 1999) whereby injectors participated in a brief intervention which explored:

1. The participants own experience of being initiated into injecting
2. Their experience of initiating others
3. The risks from initiation for themselves & others
4. Identifying aspects of their own behaviour which may promote injecting
5. Role-playing responses to imaginary situations

The evaluation suggests that it is an economical & effective way to prevent injectors initiating others.

3) Promoting the move from injecting to smoking

Another intervention that could potentially reduce the number of injectors is the promotion of heroin smoking as an alternative to injecting. This is an accepted harm reduction approach. Overall, there is limited evidence on the effectiveness of interventions to achieve this change in heroin administration. However, there is some evidence to suggest that the type and availability of heroin is one factor with a direct influence on the dominant mode of administration in any area. It is (of course) impossible for health services to directly influence local drug markets. However, knowledge of the differences in types of heroin may not be widespread amongst professionals in this field and awareness of this may help to promote a more sophisticated message on heroin administration. Interestingly, ISD figures (from the Scottish Drug Misuse Database) show a reduction in heroin injecting in Scotland from 60 to 53% between 1999/2000 and 2000/2001. This reduction is offset by an increase in heroin smoking from 39%

to 46% over the same period. Younger heroin users, under 20 years of age, were least likely to report injecting (43%) whilst those in the older age group, 30 years and over, had the highest injecting rate (58%). In Scotland, drug worker training in issues related to heroin smoking has been undertaken by Scottish Drugs Forum.

REDUCING SHARING OF INJECTING EQUIPMENT

1) Access to needle exchange facilities

The lack of availability of sterile injecting equipment is one of the common reasons why injectors share (Jones 2000). There are a number of reasons why sterile equipment may not be available to injectors including the number, location and opening times of schemes and the fear of being identified as a user. Some areas have addressed these barriers (at least in part) by offering outreach needle exchange services, further developing pharmacy networks and providing mobile needle exchange. Local service providers need to be sensitive to the needs of users in their areas to ensure that all injectors have access to sterile injecting equipment.

A recent UK-wide survey of needle exchange schemes (Hickman et al 2001) identified only 125 needle exchange outlets in Scotland. Given that injectors may only travel short distances to attend for exchange (Taylor et al 2000) it is important to provide an opportunity for all injectors to have easy access through the use of community pharmacists and outreach facilities.

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Examples: Alternatives to static needle exchange

In France IDUs have access to needles & syringes through traditional needle exchange programmes, pharmacies and vending machines. In a study by Feroni & Obadia (2000) a survey of those who used the vending machines showed that users were younger & had a shorter history of drug use. This method of distributing injecting equipment may reach IDUs early in their injecting careers as well as users who wouldn't normally access traditional NEPs. They may also help to increase geographic coverage & out of hours access.

In Lisbon, Portugal a mobile needle exchange is employed to target problematic areas in the city. Equipment distributed includes needles & syringes, condoms, disinfecting tissue, vials of distilled water, filters and health promotion materials. IDUs are given the equipment in exchange for their used equipment. In addition, used equipment is actively sought out, collected & destroyed by workers (Serio et al, 2000).

2) Access to sufficient numbers of needles and syringes

The UK–wide survey of needle exchange schemes, referred to above, found annual distribution rates per injector four times lower in Scotland than in other parts of the UK. However, even in the UK generally, evidence suggests that the current scale of distribution is inadequate.

The Lord Advocates Guidance in Scotland currently restricts the provision of needles and syringes to a maximum of five sets at the first visit and 15 sets per visit on second and subsequent visits (note : there are some exceptions to the guidance, including collecting equipment for a regular partner and provision in rural areas). The needles and syringes supplied on the previous visit must be returned and exchanged for the new supply. This restriction on numbers of needles and syringes provided may result in an insufficient supply of injecting equipment among the injecting population. This has been recognised in England and Wales where there is now no upper limit. The Minister for Health and Community Care in Scotland has, however, recently approved outline plans to introduce a discretionary limit on the number of needles and syringes that can be issued to an individual at any one visit to a needle exchange. It is likely that the Lord Advocates Guidance in Scotland will be revised to achieve parity across the UK in the near future.

3) Provision of paraphernalia

There is wide-spread interest in why needle and syringe exchange schemes worldwide appear to have contained HIV infection among injectors, but have been less successful in containing HCV. This may be (at least partly) explained by the larger pool of hepatitis C infection among injectors (when compared to HIV). However, there may be risks associated with the use of wider injecting paraphernalia including spoons and filters. Highlighting the risks of sharing paraphernalia may be an important aspect of health promotion work with injectors.

With regards to the legal situation on provision of wider paraphernalia, this is a reserved issue. At present, the UK Misuse of Drugs Act (1971) makes it unlawful to possess or supply drugs paraphernalia. The Advisory Committee on the Misuse of Drugs (ACMD) has now recommended that the Act be amended to allow the supply of injecting paraphernalia. This recommendation is being taken forward by the Home Office.

A number of research projects on injecting paraphernalia are planned in Scotland over the next 1-2 years. Please see chapter 4 of this document for details.

Example: Fitpacks

In Perth, Australia injecting equipment is distributed in packs containing combinations of needles, syringes, spoons, water & swabs. IDUs are also provided with containers for safely disposing of their used equipment. The effectiveness of this approach in Australia seems to be limited by the fact that users have to pay for the equipment. As a consequence, many people reuse the equipment before returning it to the pharmacies in the containers (Lenton et al, 2000).

EDUCATION / TRAINING

1) Peer education approaches

These approaches have been used in a number of ways to deliver HCV awareness and harm reduction information. Peer-education approaches have used a wide range of materials (e.g. newsletters, materials to support clinical consultations and information leaflets). Further, the interventions have been delivered by a range of peer educators including HCV positive individuals, drug users (and former users) and Big Issue vendors. Overall there is limited evidence on the effectiveness of peer education approaches (Preventing HCV in Scotland 2002). This is partly due to the lack of long-term tracking of individuals in evaluations of peer education interventions. However, these approaches appear to be most effective when the peer educators are credible to the target groups, when the peer education projects have clearly defined aims and objectives and when there is sufficient support and training for the peer educators.

Example: Big Issue Vendors

The **Health Development Agency** have recently published a report on the feasibility of using Big Issue vendors as peer educators for the homeless (Hunter & Power, 2000). The report considered vendors to be suitable as educators due to the fact that they comprise a cross-section of the homeless population & can provide a first point of contact for homeless newcomers. Focus groups with vendors & Big Issue staff highlighted areas where it was felt that peer educators could be of use. These areas included drug use & safer injecting, first aid, information on sympathetic health services & education on self-medication.

2) Staff training

A wide range of professional staff in the health and social care sectors may work with drug users who are HCV positive. All these staff need up to date and accurate information about HCV at a level appropriate to their involvement with injectors. For some this may be the skills to provide pre-test counselling, for others it may be the need to know where to refer someone for further advice and treatment. Specific training on the use of particular tools or training materials (e.g, Break the Cycle) may also be appropriate. Some of the interventions described above are dependent upon trained staff to deliver and evaluate them.

CHAPTER 4 FURTHER INFORMATION AND RESOURCES

Useful resources and websites

There are a number of useful websites and publications, some of which appear elsewhere in the text of this report, that provide further information about hepatitis C.

- The Scottish Needs Assessment Programme (SNAP) report
  www.gla.ac.uk/external/ophis/PDF/hepatitisC.PDF

- Report of the HIV Health Promotion Strategy Review Group. Edinburgh, Scottish Executive (2001)
  www.scotland.gov.uk/library3/health/hivhp-08.asp

- The Hepatitis Information Network
  www.hepnet.com/hepc.html

- World Health Organisation Factsheets (HCV)
  www.who.int/inf-fs/en/fact164.html

- Center for Disease Control (USA)
  www.cdc.gov/ncidod/diseases/hepatitis/

- Preventing HCV in Scotland : Options for action
  www.hebs.com/research/

- Hepatitis C – new information for professionals and patients
  www.doh.gov.uk/hepatitisc

KEY RESEARCH PROJECTS PLANNED ON THE PRIMARY PREVENTION OF HCV

In Scotland:

There are a number of research projects in HCV planned for the coming 1-2 years. These projects form part of the Scottish Executive Drug Misuse Research Programme 2001-2004:

- A project designed to explore **the injecting preparation practices** of injecting drug users in Scotland will be conducted in 2002. This project will examine in detail the quantities and types of paraphernalia used in the injecting process.

- A number of **evaluations of interventions to prevent HCV** will be funded through the Scottish Executive Drug Misuse Research Programme in 2002-2003. These evaluations will focus on primary prevention of HCV among injecting drug users.

- The project on injecting preparation practices will help inform a pharmokinetic study that will begin in late 2002. This study will examine the **safety, risks and outcomes of using paraphernalia**. The first stage of this study is laboratory based, the second stage is a controlled trial of an injecting paraphernalia kit.

For more information on any of these projects please contact Anita Morrison at the Effective Interventions Unit (anita.morrison@scotland.gsi.gov.uk).

Elsewhere in the UK:

There are a number of research projects planned and underway in England and Wales of relevence to work on HCV. Key projects include:

- The **national registry of HCV infections** has received further funding. The extension of the register in England and Wales will provide information on trends in numbers of new infections.

- A randomised controlled trial is examining the **efficacy of enhanced counselling** in the primary prevention of hepatitis C among injecting drug users. This trial is due to report in November 2002.

- A cohort study to assess the **prevalence and incidence of risk factors for HCV infection** among injecting drug users is underway. This study aims to estimate the current prevalence and incidence of HCV infection among new injectors and identify correlates for infection. This study will report in February 2003.

- A study examining the **attitude of drug users to hepatitis C** and the impact of their attitudes and knowledge of Hepatitis C on their drug use, lifestyle and use of health services. The methods include a self-completed questionnaire and semi-structured interviews.

This is not an exhaustive list. If you would like to keep up to date with on-going research on Hepatitis C in the UK, you can search the National Research Register (NRR) at www.update-software.com/National/. The NRR is a register of ongoing and recently completed research projects funded by, or of interest to, the UK National Health Service.

GLOSSARY

An **antibody** is a protein produced by the immune system in response to the presence of an antigen (antigen: any substance that stimulates the immune system to produce antibodies ; antigens are often foreign substances such as bacteria or viruses that invade the body). Antibody molecules circulate in the bloodstream and also in the lymph (the fluid in our tissue spaces), defending the body against substances identified by the immune system as potentially harmful

Blood factor transmission of the hepatitis C virus occurred in the 1970s to mid-1980s among haemophiliacs. Haemophiliacs suffer from a blood clotting disorder. Intravenous injection of the appropriate clotting factor (made from the plasma of many blood donors) is given as a treatment for the illness.

A confidence interval is a statistical range of values with a specified probability that the actual number, or true population, lies within that range. For example : there are an estimated 10,000 HCV infected current drug injectors in Scotland, but the 95% probability (or 'confidence interval') attached to this gives a range of HCV infected current injectors from as low as 8,500 to as high as 12,900. This estimated range is calculated from sample data.

Confidence intervals are usually calculated at a 95% level of probability or certainty. If you wanted to be even more confident that the range quoted included the true population, you might use the 99% confidence interval.

Incidence is a rate, showing how many new cases of a disease occurred in a population during a specified interval of time (usually expressed as number of new cases per unit time per fixed number of people; e.g., number of new cases of HCV infection per 10,000 persons in one year). Because of the restriction to 'new' cases, the population in which the incidence is measured is restricted to those who are susceptible to getting the disease during the observation period.

Prevalence is one of two basic ways of describing the occurrence of a disease in a population (see also **incidence**). Prevalence is the proportion of people in the entire population who are found to have a disease or illness at a certain point in time, without regard to when they first got the disease.

Sero-discordant is a relationship involving one HIV or HCV positive and one HIV or HCV negative partner.

Ribonucleic acid (RNA) is a chemical found in the nucleus and cytoplasm of cells ; it plays an important role in protein synthesis and other chemical activities of the cell. The structure of RNA is similar to that of DNA.

Serum (plural : sera) is blood plasma without fibrinogen and other clotting factors. After blood is withdrawn from a vein and allowed to clot, the clot slowly shrinks. As it does so, serum, a clear fluid, is squeezed out.

Unlinked anonymous surveys are used to find out more about the spread of hepatitis C, HIV and other infectious diseases. These surveys utilise specimens (e.g. blood, urine, saliva) collected for other purposes. For unlinked anonymous surveys, all data that could potentially identify the individual must be removed from the specimens before they are tested by the laboratory. There should be no possible way in which test results could be traced back to individuals.

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