Action in Partnership

Tackling **Drugs** in Scotland

Examining the injecting practices of injecting drug users in Scotland

research

Effective Interventions Unit

SCOTTISH EXECUTIVE

Scottish Executive
Effective Interventions Unit

Remit

The Unit was set up in June 2000 to:

• Identify what is effective – and cost effective – practice in prevention, treatment, rehabilitation and availability and in addressing the needs of both the individual and the community.

• Disseminate effective practice based on sound evidence and evaluation to policy makers, DATs and practitioners.

• Support DATs and agencies to deliver effective practice by developing good practice guidelines, evaluation tools, criteria for funding, models of service; and by contributing to the implementation of effective practice through the DAT corporate planning cycle.

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Scottish Executive Effective Interventions Unit Dissemination Policy

1. We will aim to disseminate the right material, to the right audience, in the right format, at the right time.

2. The unit will have an active dissemination style. It will be outward looking and interactive. Documents published or sent out by the unit will be easily accessible and written in plain language.

3. All materials produced by the unit will be free of charge.

4. Material to be disseminated includes:

- Research and its findings
- Reports
- Project descriptions and evaluations
- Models of services
- Evaluation tools and frameworks for practitioners, managers and commissioners.

5. Dissemination methods will be varied, and will be selected to reflect the required message, and the needs of the target audience.

These methods are:

- Web-based – using the ISD website 'Drug misuse in Scotland' which can be found at: http://www.drugmisuse.isdscotland.org/eiu/eiu.htm

- Published documents – which will be written in plain language, and designed to turn policy into practice.

- Drug Action Team channels – recognising the central role of Drug Action Teams in developing effective practice.

- Events – recognising that face-to-face communication can help develop effective practice.

- Indirect dissemination – recognising that the Unit may not always be best placed to communicate directly with some sections of its audience.

6. This initial policy statement will be evaluated at six-monthly intervals to ensure that the Unit is reaching its key audiences and that its output continues to be relevant and to add value to the work of those in the field.

Effective Interventions Unit

Examining the injecting practices of injecting drug users in Scotland

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Drug Misuse Research Programme

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Summary

Background [pp. 5-6]

There is considerable evidence that needle/syringe (N/S) exchange provision has helped to control HIV transmission among injecting drug users (IDUs). Recent research has also shown that prescribed methadone reduces the frequency of injecting and sharing among methadone recipients (Hutchinson et al, 2000; Simoens 2002). Nevertheless, despite evidence that current interventions may be helping to reduce the spread of hepatitis C infection, the indications are that prevalence and incidence are both still very high. Forty-five per cent (209/463) of Glasgow injectors who had commenced injecting after the introduction of needle exchange services were found to be HCV positive (Taylor et al, 2000a). A further study in 2001/2002 found that among those who had been injecting for less than two years (i.e since 1999), 37% (55/147) tested HCV positive (Taylor et al, unpublished data).

From these findings it is apparent that more effective ways to prevent HCV infection need to be developed. Studies to date, however, have not allowed the reporting of the specific practices which may place the IDU at risk of HCV acquisition. Needle sharing is a key factor in HCV transmission. Approximately one third of injectors continue to share needles and syringes and this habit may be increasing (Taylor et al, 2001). The sharing of filters, water and spoons have also been implicated in the spread of HCV infection (Hagan et al, 2001). However, we do not yet know enough about the actual injection preparation methods which may influence transmission e.g. the types of filters used, frequency of re-use of filters, water or spoons, the possible exchange of body fluids through sharing of tourniquets, swabs, etc. This information is essential to inform the development of effective interventions.

Accordingly, funding was provided by the Effective Interventions Unit through the Scottish Executive's Drug Misuse Research Programme to undertake an in-depth observational study of the injecting practices of IDUs in Glasgow.

This summary provides a brief overview of the study and its findings. The full report is available from the Effective Interventions Unit.

Aim [pp. 6-7]

The aim of the study was to examine the injecting practices of Scottish injecting drug users to a degree of detail not previously achieved in the UK. The specific focus was practices that could potentially facilitate the transmission of HCV infection. Risk practices other than the direct sharing of needles and syringes were of special interest as these are not so well understood.

Methodology [pp. 9-12]

The primary means of data collection was direct observation using a video camera to record injecting events in IDUs' own settings. The study sought to explore how IDUs prepare and administer their injections and what happens immediately afterwards.

Recorded data were augmented with researchers' field notes. These provided a record of the circumstances surrounding each injecting event. Additionally, taped interviews were conducted with the majority of participants. All interviews took the form of an informal conversation loosely based around the issues raised in the study objectives.

Recruitment and field work took place over a seventeen-week period from the first week of January 2003 to the first week of May 2003. Respondents were recruited using a targeted snowballing technique which provided a range of injectors at different stages of their injecting careers.

Results [pp. 13-23]

A total of 30 IDUs were recruited to the study. Injecting careers ranged from 2 weeks to 21 years. Almost three-quarters of the sample (n=22) were male. Twenty-five (25) lived in their own or partner's home and five were homeless. Eight participants had a sexual partner who was also an IDU. The majority of respondents (n=26) injected heroin only. Two IDUs injected heroin and cocaine and two injected cocaine only. Half (n=15) of the study group were not in treatment during the data collection period, 14 respondents were receiving methadone treatment and one participant had a short stay in a residential rehabilitation unit.

The 30 members of the study group were recorded injecting on 48 separate occasions. Within these 48 events, drugs were prepared for injecting a total of 65 times and a total of 103 injections were administered. Twenty-two of the 48 recorded events and 47 of the 65 preparation episodes involved two or more IDUs injecting together.

The results showed that there are multiple ways in which IDUs put themselves at risk of HCV transmission during the injecting process.

- **Sharing of injecting equipment**

To become infected with HCV, an individual must come in contact with the blood of an infected person. The most common route of HCV transmission is injecting drug use. The most obvious route of HCV transmission is for an IDU to inject with a N/S previously used by another potentially infected injector. However, only one such incident (1/103 injections) of direct sharing occurred in this study. The indirect sharing of potentially infected N/S and the sharing of other potentially infected injecting paraphernalia, however, was more common.

Participants in the study invariably injected with their own, or what they regarded as their own, N/S. Just over half of the injection episodes (54/103) involved the use of new, sterile N/S. The potential for transmission arose in the episodes (49/103) in which participants injected with previously used N/S. Apart from the one IDU who was seen to inject with another's N/S, the participants in the other 48 injection episodes believed that their pre-used needles had been used only by themselves. Some participants, however, admitted that they have may have used another person's N/S by mistake. This could happen in two ways. Firstly, cohabiting IDUs often stored their used N/S next to each other's and then had difficulty in distinguishing one from another. Another way in which N/S could be confused was where two or more people were injecting together, put their N/S down next to each other's and then could not tell which was theirs.

The utilisation of a pre-used N/S in the preparation or drawing up of drug solute for more than one injector was another way in which needles/syringes were shared indirectly. It was common to prepare drugs in one batch for all participants, this being the most efficient way to divide drugs bought with pooled resources. In more than three-quarters (38/47) of the preparation episodes involving two or more IDUs one batch of drug solute was prepared to be divided among the group. On 14 occasions a pre-used N/S drew the solution up first. Although the needle does not come into direct contact with another IDU in such circumstances, it potentially could contaminate any or all of the other injecting paraphernalia or drug solution.

In 44 of the 47 preparation episodes involving more than one IDU, cookers, filters and water were shared among participants.

The majority of cookers (n=46) used in the 65 preparation episodes were visibly unclean. Twenty-five (25/46) of these episodes involved two or more participants

sharing the same previously used cooker. Only 13 (13/65) episodes involved a cooker which was cleaned in front of the researchers; five (5/13) of these were then shared. In two episodes the cooker was visibly clean from the outset and shared between two participants. In four cases the cleanliness of the cooker could not be discerned.
In seven (7/65) episodes the water used to dissolve the drug was not fresh. On these occasions the water used to prepare the drug solute had been used previously to clean needles and was thus potentially contaminated. In two episodes, previously opened bottled water was used and in four episodes the source of the water was unknown. In three episodes the participant used no water, the drug was dissolved using 'Jif' lemon juice alone. On all other occasions fresh tap water, freshly boiled or fresh bottled water was used.

Flush water, used to rinse out N/S injection, was another potential source of infection. Seventy-one (71) of the 103 administration episodes involved participants flushing their N/S with the same water used in the preparation process. Forty-nine (49/71) of these episodes involved two or more participants sharing the same flush water. This would not necessarily be a risk behaviour if the flushed N/S were then disposed of. However, of the 82 needles used in the 103 administration episodes, only 25 (25/82) were disposed into a cin bin. The remainder were stored in a variety of places for use at another time. Storage in a cin bin did not guarantee that such needles would not be re-used. Researchers witnessed N/S extracted from cin bins on several occasions.

Blood-to-skin contact is generally regarded as a low transmission risk, but in circumstances where this happens frequently or where skin is broken, this can increase this risk. IDUs were seen placing bloody fingers on another's injection site on nine occasions and leaving bloodied tissues or cotton wool on tables and other surfaces on four occasions.

- **Risk behaviours for infections other than blood borne viruses**

While the main aim of the study was to identify risk behaviours for HCV, many of the behaviours recorded also have potential for the development of bacterial infections. The level of hygiene was generally low. In only one (1/103) injection administration did a participant wash their hands prior to injecting. A swab was used to clean the injection site prior to injection in only 20 (20/103) occasions. On no occasion was the preparation surface wiped before use and on 15 (15/65) the surface was visibly unclean. Of the 57 filters used in the preparation episodes, none were disposed of and eight were kept in closed containers highly conducive to the development of anaerobic bacteria.

- **Social environment and harm reduction**

Most of the study participants were aware of blood borne viruses (BBVs) and how they were transmitted. However, the circumstances of their lives and drug habits often acted as obstacles to the practice of safe injecting. Many of the risks — preparing drugs communally, storing used filters and spoons — arose out of the need to ensure that they received the maximum amount of drug possible. This included the 14 participants who were receiving methadone at the time of the study but still required to "top-up" with heroin.

Even for those who fully understood how to prevent contamination of equipment and drug solute from blood, the processes of preparation and injecting were riddled with pressures which may result in sub-optimal practices. For example, when IDUs injected together the controlling person was usually, although not always, the one who had supplied the drug. Those not in control may need to compromise their desire to inject safely because they do not have the same leverage as the controller in the ways that drugs are prepared and injected.

Most participants maintained that despite greater awareness of the consequences of unsafe injecting they would still engage in risky practices in certain scenarios. Many said they would use or consider using another IDU's previously used N/S if: a) they were experiencing severe withdrawals or b) they did not have a needle/syringe of their own. Other factors shaping an individual's injecting practices included naivety, bereavement, laziness, tendency towards short-term thinking and homelessness. Homelessness could lead to the practice of outdoor injecting. Those who inject outdoors have no access to running water, cannot stock up on sterile injecting equipment, and do not have the luxury of being able to take their time in the preparation process.

In summary, harm reduction messages have to compete with other often more pressing concerns.

Implications for policy and practice [pp.37-39]

The findings of this study have implications for policy and harm reduction services.

- It is important that IDUs have the potential to use a sterile N/S for each injecting episode. Recent changes have been made to allow needle exchange facilities in Scotland to give out a greater number of sterile needles/syringes. These changes should help to some extent. However, the need for IDUs to have 24-hour access to needles/syringes must also be addressed. This could be done either through increasing the number of services providing 24-hour access, or by making clean equipment available through other means such as vending machines.

- In situations where IDUs are injecting in the company of other IDUs, they need better ways of distinguishing each other's equipment. This could be done easily if, for example, the commonly used fixed 1ml needle/syringe were produced in different colours.

- IDUs need more information about the ways in which injecting equipment can become contaminated in the process of drug preparation. This could be achieved through a training video, posters and leaflets demonstrating risk practices, and by developing health promotion materials which emphasise the need for hygienic practices.

- Policy-makers should consider whether the provision of safe injecting rooms would help to address some of the particular needs of those injectors who have to inject outdoors.

- Just under half of the sample were receiving methadone treatment but were still injecting. Elsewhere, methadone maintenance therapy has been shown to reduce, but not eliminate, the practice of injecting (Hutchinson et al, 2000). Inadequacy of dose may be a factor influencing the continuation of injecting.

Chapter 1: Introduction

Background

There is considerable evidence that needle/syringe exchange provision has helped to control HIV transmission among injectors (IDUs) (Frischer et al, 1992; Goldberg et al 1996). Recent research has also shown that prescribed methadone reduces the frequency of injecting and sharing among methadone recipients (Hutchinson et al, 2000; Simoens 2002). Nevertheless, despite evidence that current interventions may be helping to reduce the spread of hepatitis C infection, the indications are that prevalence and incidence are both still very high.

It is estimated that 10,000 (44%) of Scotland's 22,800 current IDUs have been infected with HCV (Hay et al, 2001), of whom approximately 8,000 continue to be infectious.

A third of Scotland's IDUs reside in Glasgow (Hay et al, 2001). Between 1990-96 approximately 2,500 IDUs in Glasgow were interviewed and saliva-sampled as part of a worldwide WHO collaborative investigation of HIV prevalence and risk behaviours (WHO Collaborative Study Group, 1993). IDUs were asked to provide consent for the HIV and hepatitis testing of their saliva specimens and were asked questions about drug injecting behaviours and lifestyle. In early 1998, a hepatitis C test to detect antibodies in saliva became available (Cameron et al, 1999) and residual specimens which had been stored were tested.

Of 1,949 IDUs, recruited and tested between 1990 and 1996, 1,189 (61%) were found to be saliva antibody positive for HCV (Taylor et al, 2000a); of those who had begun injecting after 1992, following the extensive development of the Glasgow needle exchange scheme, almost one-third (27/87) were HCV antibody positive in saliva. The results indicated, moreover, that new infections were more likely to occur in the community, where new needle and syringes are available, than in the prison setting where prisoners have no such access; of those who began injecting after full implementation of Glasgow's needle/syringe exchange provision in 1992 and were found to be HCV saliva antibody positive, only one-third possibly acquired their infection in prison.

The 1990-1996 surveys, which were geared towards HIV, provided insufficient or no information about the specific aspects of injecting drug use such as the sharing of filters, water or spoons, which have also been implicated in the spread of HCV (Hagan et al 2001, Thorpe et al 2002).

In 1999 and 2001/2 two further cross-sectional surveys were undertaken in Glasgow, adopting the same sampling method and questionnaire as used in the 1990-1996 studies and including a new set of questions specifically related to HCV. The 1999 study investigated IDUs who had commenced injecting since 1990. Analysis showed that of 463 IDUs recruited, HCV prevalence was 45% (209/463) in saliva. Among those who had been injecting for less than two years, 25% (23/93) were HCV antibody positive in saliva (Taylor et al, 2000b). The 2001/2 survey examined injectors who had begun injecting since 1996. Of the 466 IDUs recruited to the study, 55.2% (257/466) were HCV positive in saliva. Among those who had been injecting for less than two years (i.e since 1999), 37% (55/147) tested HCV positive in saliva. Thus it was clear that HCV was continuing to spread among IDUs in the late 1990s and early 2000's. In the 2001/2 study, 65% (n=301) had injected with a needle and syringe previously used by someone else at least once in their injecting career, 71% (323/457), 75% (346/458) and 75% (309/413) had shared filters, spoons and water, respectively, when preparing to inject. (Taylor et al, unpublished data).

The 2001/2 study also included a qualitative component whereby injectors were interviewed in depth about their reasons for continuing to share injecting equipment in the era of needle exchange. Some of the circumstances in which IDUs reported injecting with needle/syringes previously used by someone else were:

- suffering withdrawal symptoms,
- inability to resist the immediate availability of injectable drugs,
- lethargy and
- trust in their injecting partners.

Some environments, particularly those where large numbers of IDU were gathered together, also facilitated the temptation to share injecting equipment. These included hostel accommodation and prisons. Sharing always took place when IDU did not have access to their own clean and unused needle/syringes, in some cases because the opening hours of needle exchanges and pharmacies were too limited and in other cases because these facilities were too far away (Taylor et al, in preparation).

These quantitative and in-depth interview approaches elicited much information about reported IDU behaviour and confirmed the continuing spread of HCV among recent initiates to injecting. From these study results it is apparent that more effective ways to prevent HCV infection need to be developed. This will only be possible, however, if the transmission dynamics of HCV among IDUs are fully understood. Studies to date have not allowed the reporting of the specific practices, as yet poorly understood, which may place the IDU at risk of HCV acquisition. We know that needle sharing is a key factor in HCV transmission — approximately one third of Scotland's injectors continue to share needles and syringes (ISD 2001) — and that this habit may be increasing (Taylor et al, 2001). However, we do not yet know enough about the actual injection preparation methods which may influence transmission, e.g. the types of filters used, frequency of re-use of filters, water or spoons, the possible exchange of body fluids through sharing of tourniquets, swabs, etc. This information is essential to inform the development of effective interventions.

Accordingly, funding was provided by the EIU through the Scottish Executive's Drug Misuse Research Programme, to undertake an in-depth observational study of the injecting practices of IDUs in Glasgow.

This study forms part of the EIU's programme of research in the area of hepatitis C infection (Effective Interventions Unit, 2003). In particular, the study findings will inform a laboratory based study of the safety, risks and outcomes from the use of injecting paraphernalia which is planned to begin at the end of 2003.

Aim

The aim of the study was to examine the injecting practices of Scottish injecting drug users to a degree of detail not previously achieved in the UK. The specific focus was on practices that could potentially facilitate the transmission of HCV infection. Risk practices other than the direct sharing of needles and syringes were also of special interest as these are not so well understood.

Objectives

The objectives of the study were:

1. To identify and describe the various stages involved in the preparation of drugs for injecting.

2. To identify the quantities and types of items used in the preparation process, how they are used and where they were obtained.

3. To explore to what extent preparation methods vary between injectors.

4. To identify whether different preparation methods are used for different injecting sites.

5. To identify whether paraphernalia items are shared and with whom.

6. To identify the levels of hygiene used in preparation e.g whether hands are washed prior to injecting, whether injecting sites are washed or swabbed prior to injecting, cleanliness of preparation sites.

7. To identify how injectors first learned to prepare injections and inject.

8. To identify the factors which influence paraphernalia selection, including difficulties in access.

9. To identify knowledge and beliefs about level of risk attached to different practices and the use of different paraphernalia.

10. To describe injectors' exposure to and adherence to harm reduction advice around safer injecting and paraphernalia use.

This report is aimed at all those who are involved in the delivery of care and treatment to drug injectors, to the providers of harm reduction services and to those who decide harm reduction policy. It is hoped that the findings of this study will provide a better understanding of the complexities of drug injecting and thus the complexities involved in reducing risk behaviours for blood borne virus transmission. This, in turn, may help the development of more effective harm reduction policies.

The following report is divided into four chapters. Chapter 2 describes how the study was undertaken. Chapters 3 and 4 give the results from the study. Chapter 3 describes in detail the process of injecting and the frequency with which each part of the process occurs. To highlight the variation in injecting techniques and risk behaviours and also the influence on these of social settings. Chapter 4 provides a series of in-depth case studies. Chapter 5 discusses the results and draws conclusions.

Chapter 2: Methodology

Data collection

The primary means of data collection was direct observation using a video camera to record injecting events. The rationale behind this methodological approach was to give an insight into the injecting process that would deepen the understanding of how HCV transmission occurs in IDU environments. Thus, an exploration was sought of how IDUs prepare and administer their injections and what happens immediately afterwards.

During recorded observations researchers asked participants to identify the quantities and types of items being used and from where these items were obtained. In some instances conversation would then develop into a more detailed description of the process as it happened.

The research team sought to record events in accordance with the generally accepted principles of this methodology. This involved the recording of "whole events" using long single takes from the widest possible angle and with the least interference to the scene being recorded (DuFon, 2002, Erickson, 1992). The "whole event" was defined to respondents as the preparation and administration and post-administration stages of injecting. Conditions permitting, and with participant consent, other observational footage was also recorded. This style of ethnographic video recording encourages the researcher to use the camera as a "passive recording device" which allows events to "speak for themselves" (DuFon, 2002). However, on occasion, interjections were made by researchers to clarify certain points.

Recorded data were augmented with researchers' field notes. These provided a record of the circumstances surrounding each injecting event. Additionally, taped interviews were conducted with the majority of participants at their discretion. Interviews took place either immediately after an injecting event or during a separately arranged appointment. Most interviews were preceded by at least two recorded observations. All interviews took the form of an informal conversation loosely based around the issues raised in the study objectives.

An estimated total of 720 hours were spent in recruiting, establishing relationships with participants and collecting data. Twenty-one hours of video footage was recorded. Time spent with individual IDUs or groups of IDUs ranged from 3 hours to 40 hours. This time spent with participants did not involve the observation session alone. To develop rapport and a trusting relationship, researchers watched television, provided transport for participants, accompanied them to collect their methadone prescription and, on one occasion, the research team helped a participant to move house. Spending significant amounts of time in the company of participants reassured most that the researchers were interested in investigating injectors' own perspective on their injecting practices. It also ensured that the collected data reflected the process of injecting in the context of the IDU's everyday life.

Introducing a camera into observational research creates the possibility that those being recorded may embellish their behaviour with an element of performance. To reduce this possibility as much as possible, participants were filmed in their own environments and were repeatedly reminded that any footage filmed was not intended for public consumption. The focus was on how injectors "make up and have a hit" rather than "making a movie". Furthermore, injecting episodes were recorded with a small hand held digital camcorder (JVC GR-DVL 160 ER: 17cm x 8.5cm x 7.5cm) to maintain the element of unobtrusiveness (Carruthers, 2003).

Pre-recruitment

Prior to data collection the study design included a preliminary phase in which members of the research team sought to acclimatise themselves to the lifestyles and behaviours of the city's IDUs. This involved canvassing opinion from as many relevant sources as possible. Local knowledge was identified through a variety of sources representing different perspectives. Current and former IDUs were asked for their opinions and advice. At the service provider level, professionals working in drug treatment, social services, needle exchange and outreach workers were asked for their input. Researchers also attended a drop-in clinics run by the city's homeless addiction team and worked for several weeks on a voluntary basis with a city-centre based soup kitchen. This consultation exercise helped researchers familiarise themselves with the concerns of IDUs and to identify current themes relevant to everyday lives of Glasgow IDUs.

Recruitment and sampling strategy

Recruitment and field work took place over a seventeen-week period from the first week of January 2003 to the first week of May 2003. A total of 30 respondents were recruited to the study. This sample was consistent with our initial aim to recruit between 30 and 50 current IDUs. The limited sample size allowed the establishment of trust to develop between researchers and participants and which allowed the researchers to gain access to injectors' own homes and other environments and to observe injecting practices in as natural a setting as possible.

Respondents were recruited using a targeted snowballing technique (Beirnacki & Waldorf, 1981). Snowballing provided a range of injectors at different stages of their injecting careers. Due to the limited time available in the field, participants were recruited from multiple venues to maximise recruitment opportunities. Potential participants were approached in two distinct settings: needle exchanges and in the street.

Agency based recruitment took place in four fixed site needle exchanges across the city. The most successful of these recruiting venues was a city centre based agency providing multiple services for drug users. Within this busy venue, recruitment occurred during daytime office hours. Potential participants waiting for a methadone prescription or new needles and syringes were approached in the agency's waiting room. In addition, a poster advertising basic details about the study and the research team's mobile telephone number was left on the waiting room walls. Recruiting at this agency produced 14 study participants; six initial contacts were met in the clinic, five directly and one who contacted the research team via the poster. Through these six, researchers were introduced to a further eight study participants.

The remaining agencies were needle exchanges run in local health centres during the evening in the Gorbals, Easterhouse and Parkhead areas of the city. In this context, participants were approached about the study after they had exchanged their needles and syringes. Recruitment at these agencies eventually led to a total of six study participants; three initial contacts introduced the research team to a further three respondents.

Street based recruitment involved opportunistic sampling. Individuals begging or selling the Big Issue magazine around a prominent open air, city centre car park were approached and engaged in a general conversation. This dialogue began with some general questions about the city centre drug scene. Once established, the conversation was steered towards the issue of injecting drug use. Subject to individuals identifying themselves as a current IDU, conversation would then evolve into a more detailed explanation of the research. This approach resulted in meeting seven participants; four initial contacts were made through whom the team were introduced to a further three

respondents. The remaining three participants were approached in a similar manner within two separate housing schemes within the city.

Once researchers were satisfied that potential participants were current IDUs, the background and aims of the study were explained to interested individuals. If the individual was still willing to participate, an explanation of our intention to film injecting practices and conduct informal interviews was provided. At this stage they were given an information sheet further explaining the study aims and objectives and given an opportunity to ask questions about the study. They were also informed about their rights regarding confidentiality and anonymity and asked to sign a consent form. Consent to involvement in the research was presented as a product of an ongoing negotiation between the researchers and the participant. In other words, the signing of a consent form did not signal the end of respondents' right to withdraw consent; this point was made forcefully and explicitly.

Following this process of information and consent, arrangements were made to meet the participant at an appointed date, location and time. These arrangements were entirely the choice of the respondent. Respondents were then informed that they would be reimbursed £8 for each observation.

Data analysis

The process of reviewing recorded footage began at the early stages of fieldwork. Early reviewing sessions ensured that recordings were accurate and clear.

Erickson's "ethnographic microanalysis of interactions" provided a framework of analysis best suited to the exploration of how injectors inject (Erickson, 1992). This analytical method concerns itself with the minutiae of habitual or routine human behaviour. Through a process of repeated viewing of the multiple examples of the same type of event, that event can be broken down into component parts and then reassembled to explain the process to those unfamiliar with this routine behaviour. Additionally, this method also seeks to establish a range of recurring themes inherent in the process from common events to less typical ones.

All recorded events were analysed in accordance with the 5-step model that Erickson proposes:

1. Two researchers first watched each of the injecting events in their entirety.

2. From these viewings, three constituent parts of the process were identified: the start of that activity, the main focus of that activity and its conclusion.

3. The third step involved an investigation of how these three major sequences were organised and how they combined to form the whole event.

4. Each of the tapes was then transcribed onto a tape log sheet by two researchers reviewing the footage simultaneously. Tape logs consisted of a time code followed by some descriptive text. Each separate action, as well as dialogue, was noted, coded and entered into a Nudist software package. Coding was developed using the aims and objectives and from recurring themes which emerged from the footage.

5. Coded tape logs were searched for the frequency of certain events. Moreover, searches explored possible relationships between certain injecting practices and wider factors such as environment. These searches enabled researchers to develop a representative model of injecting.

Recorded observations were augmented by informal taped interviews and researcher fieldnotes.

Ethical approval

The Greater Glasgow Primary Care Trust Research Ethics Committee granted ethical approval for the study. Achieving ethical clearance required the committee to be satisfied that IDUs were in a competent state to provide informed consent, that anonymity and confidentiality would be ensured, and that effective safety measures were put in place for researchers' safety. In addition to ethical approval, advice was also sought form the Crown Office and Procurator Fiscals office in Glasgow prior to commencement of fieldwork. The Glasgow City Social Work Department also granted ethical permission.

Maintaining anonymity

To ensure anonymity, video recordings focused on the participant's hand movements and their chosen injection sites rather any face shots. Further, prior to any recorded observation, participants were encouraged to cover any identifiers such as tattoos, birthmarks, jewellery or scars that may have identified them and to remove any unique household items from the camera's view. Crucial to achieving both participants' initial consent and in maintaining their trust was the constant and continuing emphasis on the participants' right to view the recorded footage and withdraw consent (and any footage involving them) at any time. All of those who reviewed their footage were satisfied that the footage captured their actions as opposed to their identities. Seven participants declined to review their footage, most of these preferring not to see themselves injecting.

Safety issues

Two researchers recruited the sample and collected all the data with the support of a part-time interviewer. Researchers always worked in pairs and informed the study manager each day of their whereabouts. Each researcher was provided with a mobile phone and personal alarm. At the end of each day's fieldwork they informed the study manager of their safety.

Chapter 3: Results

The results will be presented in two ways. This chapter will provide a detailed description of the injecting process and the frequencies with which each element occurs. The following chapter will present case studies chosen to illustrate the variation that exists in injecting practices.

Study group characteristics

The study group consisted of 30 injectors aged between 21 and 42 years of age. The mean age of participants was 31.7 years. The majority of the group were male (n=22). Eight of the participants were in a current relationship with another IDU. The majority of respondents (n=25) lived in their own home or that of a sexual partner or family member. The remaining five were "skippering" (sleeping rough), living in emergency accommodation or staying with family or friends through necessity rather than choice. Only four (4/30) of the group reported having some form of employment. This employment was in all cases part-time, occasional and ended during the study. Roughly half (16/30) of the respondents did not know their HCV sero-status. Six participants reported that they were HCV positive and eight said they had tested HCV negative. Half (n=15) of the study group were not in treatment during the data collection period, 14 respondents were receiving methadone treatment and one participant had a short stay in a residential detoxification unit.

Drug use & injecting habits

Injecting careers in the group ranged from just two weeks to 21 years, with seven (7/30) group members injecting for less than two years. A small minority (3/30) considered themselves to be occasional IDUs. For the rest, injecting represented an everyday occurrence subject to available funds.

The majority (n=26) of respondents injected heroin only. Two IDUs injected both heroin and cocaine and two injected cocaine only.

Just over two-thirds of the group (n=21) practised regular self-injection with the remainder (n=9) preferring to entrust the administration of their injection to a fellow IDU. Of this latter group, six (6/9) individuals displayed total reliance on another IDU for the intravenous delivery of their drugs. The remaining three were observed both self-injecting and, on some occasions, trusting another IDU to give them their injection. The request to be injected by another arose either because the vein they proposed to use posed great challenges to the self-injector or because their confidence in their own ability had waned for some reason.

Overview of observed events

In total the research team observed members of the study group injecting on 53 separate occasions. Forty-eight of these **events** were recorded on video; only these 48 recorded events were used in the analysis. Each of the 48 recorded events are detailed in Appendix 1.

Eighteen events (18/48) involved an IDU injecting alone; in two of these events another IDU was present to assist with administration of the injection but did not inject themselves. Five of those observed injecting alone were also seen injecting in the company of others on other occasions. The majority of observed events (22/48) involved groups of two IDUs injecting together. Less common were groups of three (7/48) and the observation of a group of four IDUs occurred once (Table 1). Group injecting events usually involved cohabiting partners (16/30) either by themselves or in conjunction with family members, friends or acquaintances. A further 12 group injecting

events involved acquaintances and/or friends and the remaining two involved "grafting partners" (IDUs who generate habit supporting income together).

TABLE 1. NUMBERS OF IDUS INVOLVED IN THE 48 RECORDED EVENTS

No of IDUs	No. of events
One IDU only	18
Two IDUs	22
Three IDUs	7
Four IDUs	1
TOTAL	**48**

The injecting process

The entire injecting process can be split into three distinct parts. These are the preparation episode, the administration episode and the post administration episode (Carruthers, 2003).

During the 48 recorded events, 65 **preparation episodes** were observed. This stage was defined as the transformation of purchased powdered drugs into a liquid form suitable for injecting (Carruthers, 2003).

The researchers also observed 103 **administration episodes**. The administration episode starts when the IDU begins to locate a vein for injection and finishes when the needle is removed after successful intravenous delivery. Three of these injecting episodes involved the direct injection of the contents of a temazepam capsule by one IDU and therefore did not require preparation.

The final stage of the injecting process is the **post administration** stage that occurs once the needle has been removed from the vein.

The three parts of the injecting process provide a useful model to analyse the results. Using this model, recorded observations were examined for the equipment used, the techniques employed and for specific risk incidents which had the potential to transmit hepatitis C infection.

The preparation, administration and post administration stages of the injecting process are now described in detail below.

Preparation

The purpose of the preparation stage is to transform the drug into a liquid form appropriate for injection — a process known as 'cooking'. All 65 observed preparation episodes involved heroin or cocaine in powder form; 56 episodes involved heroin and nine involved cocaine. In only one observation was poly-drug injecting observed. On this occasion the participant injected both cocaine and temazepam.

- **Equipment used in the preparation stage**

There are several pieces of equipment required for preparing drugs for injection. Firstly, a **preparation surface** is required for the drug user to place their equipment upon. The powdered drug is then put into a heat resistant container (a **"cooker"**). Depending on the type of drug being prepared, an **acidifier** may be necessary to help dissolve the drug. Heroin, in the form in which it is available in Scotland, requires an acidifier whereas cocaine does not. **Water** is required to mix the drug and liquefy it for injection. Some form of **heat source** needs to be available to heat and dissolve the drug solution.

Once the drug is dissolved a **filter** is submersed in the solution in the cooker. The tip of the needle is placed on the filter and the solution drawn up through it; the purpose of the filter is to strain out impurities in the solution.

The types of equipment used by participants at each stage are described in detail below.

- **Surface**

In 21 (21/65) preparation episodes, participants prepared upon a fairly restricted area. Examples of such preparation surfaces included a wooden board, a magazine, a book, tissue paper, a swab and a tin lid. In the remaining 44 episodes participants placed their equipment upon a larger surface such as a table.

On no occasion was the preparation surface wiped before use and on 15 (15/65) the surface was visibly unclean. The remainder (50/65) appeared clean to the researchers.

- **Cookers**

A spoon was used as a cooker in the majority (60/65) of preparation episodes; in the remaining five episodes the bottom of an aluminium drinks can was used. On one occasion the aluminium can was picked up from the pavement. The majority of cookers (46/65) were unclean (Table 2). This was noticeable as there were traces of residual drug liquid left over from a previous episode. Twenty-five (25/46) of these episodes involved two or more participants sharing the same previously used cooker (Table 3). Only 13 (13/65) episodes involved a cooker which was cleaned in front of the researchers; five (5/13) of these were then shared. In two episodes the cooker was visibly clean from the outset and shared between two participants. In four cases the cleanliness of the cooker could not be discerned.

TABLE 2. CLEANLINESS OF COOKERS USED IN 65 OBSERVED DRUG PREPARATIONS

Cleanliness	No. of cookers
Not clean	46
Cleaned prior to preparation	13
Cleanliness unknown	4
Visibly clean at outset	2
TOTAL	**65**

TABLE 3. CLEANLINESS OF SHARED COOKERS (N=25)

Cleanliness	No. of shared cookers
Unclean	18
Cleaned prior to preparation	5
Visibly clean at outset	2
TOTAL	**25**

- **Acidifier**

Within the 56 episodes in which heroin was prepared, 26 involved sachets of citric acid from a Pharmacy/Needle Exchange, 25 episodes involved catering citric obtained from either a local shop or a 'Home Brew' supplier, and in three episodes the same participant used 'Jif' lemon juice. On two occasions the type of acidifier was unknown. The seven remaining episodes involved cocaine which does not require an acidifier.

- **Preparation water**

In 32 (32/65) episodes fresh tap water was used; in 14 episodes freshly boiled tap water was used and in three episodes participants used newly opened bottled water. In seven episodes the tap water was not fresh. On these seven occasions the water used to prepare had been used previously to clean needles; this is known as 'flush water'. In two episodes previously opened bottled water was used and in four episodes the source of the water was unknown. In three episodes the participant used no water, the drug was dissolved using 'Jif' lemon alone (Table 4).

TABLE 4. TYPES OF WATER USED IN THE 65 PREPARATION EPISODES

Type of water	No. of occasions used
Fresh tap water	32
Freshly boiled tap water	14
"Flush" water	7
Source of water unknown	4
Newly opened bottled water	3
No water used	3
Previously opened bottled water	2
TOTAL	**65**

- **Heating and dissolving**

The majority of episodes (44/65) involved the use of a cigarette lighter to heat the solution. Other sources included a cooker hob, a burning medi-swab and a burning candle. In the majority of cases the powder was dissolved with the aid of a stirrer. On 26 (26/65) occasions, participants used the cap from a needle/syringe, and on 20 occasions the plunger end of a 1ml syringe was used. A penknife was used on four occasions, the front end of a 2ml syringe was utilised on three occasions, a nail file and a paperclip were each used once. On five occasions the solution was not stirred and in another five observations the type of stirrer was unknown.

- **Filters**

The filter from a cigarette was used in the majority of episodes (33/65). In 12 episodes cotton wool or a cotton bud was used, and a piece torn from a medi-swab was used once. In 18 episodes, the filter material was unknown. On one occasion, no filter was used. Most (41/64) filters were new, 13 had previously been used and the status of 10 filters was unknown.

- **Drawing solution into needle/syringe**

At the end of the preparation stage, the drug is ready to be drawn up into the needle/syringe. In 38 of the 47 preparation episodes involving more than one IDU, a single prepared drug solute was divided between the group (Table 5). There are multiple ways of ensuring an even divide of the drug solution in these circumstances (Grund et al, 1996). One method involves frontloading and backloading. These are terms used to describe the process of transferring liquid from one needle/syringe to another. Frontloading involves squirting the drug solute from one syringe through the needle attachment aperture on another syringe, the plunger of which has been drawn back to leave a void. Backloading is the practice of transferring the solution from one needle/syringe to another by removing the plunger from one syringe and squirting the solution through the needle attachment of another into the back of that syringe. Another method involves drawing the whole amount into a syringe to measure the total

TABLE 5. PREPARATION OF DRUGS AND SHARING FILTERS WATER AND COOKERS IN EPISODES INVOLVING MORE THAN ONE IDU (N=47)	
Method of preparation	**No. of preparations**
Prepared in one batch and divided	38
Prepared consecutively using same uncleaned spoon and filter	6
Prepared separately using different spoon and filter	2
Unknown	1
TOTAL	**47**

volume of liquid in the cooker and then squirting an agreed portion back on to the cooker to allow the other user(s) to draw up their portion into their needle/syringe (Koester et al. 2003). Within the study group, however, the preferred method was to pre-measure the water before adding it to the cooker. Once this had been done, and the drug dissolved, participants drew up their portion of the solution and checked the syringes to ensure each had the same amount. Each individual's share could be drawn up into his or her syringe consecutively or simultaneously.

Consecutive drawing up was the most commonly observed practice. In 27 out of the 38 group preparations the solution was drawn up in this fashion. A previously used needle drew the solution up first in more than half (14/27) of these occasions. Also common was for one or more injectors to place their needle/syringe back onto the filter after all or most of the solution had been drawn up.

- **Overview of sharing of filters, cookers, water**

In 44 of the 47 preparation episodes involving more than one IDU, cookers, filters and water were shared among participants. On 38 occasions, a single batch of drug solute was prepared on one cooker, using one filter for division among the group; the other six episodes involved separate preparations using the same cooker and filter (See again Table 5).

- **Preparation hygiene**

There was a general lack of hygiene throughout the preparation stage. No preparation surface was wiped prior to preparation. In only one (1/103) episode did a participant wash their hands prior to preparation, and in only 20 (20/103) episodes was a swab used to clean the injection site prior to injection.

Administration

The administration stage involves choosing a needle and syringe with which to inject and choosing the location in which to inject.

- **Needles/syringes**

Out of 103 administration episodes the majority (n=88) involved the use of a 1ml insulin needle and syringe. Fourteen injections were administered with a 2ml syringe with detachable needle. Needles are colour coded depending on their thickness. Of these 14 administration episodes, five involved a green needle (0.8mm), five a blue needle (0.6mm) and four an orange needle (0.5mm). In one episode involving a 2ml syringe, the gauge of the needle was unknown.

In five episodes participants transferred the solution from one needle and syringe to another. This usually occurred because the needle in the first set was blunt or the needle and syringe became blocked. In four of these episodes, the original and transfer sets belonged to the same IDU. One one occasion, however, a participant backloaded the solution from their own used needle to another's used needle and then injected themselves with it. **This was the only observed example of 'direct' needle sharing throughout the study.**

Of the 103 administration episodes, 54 involved a sterile needle/syringe and 49 involved a pre-used needle/syringe (Table 6). Participants involved in 48 (48/49) of these incidents reported that the needle/syringe had been used only by themselves. However some participants admitted that they may have used another's needle by mistake. The reason given was the difficulty in distinguishing one needle/syringe from another in situations in which IDUs were using the same size of syringe and gauge of needle. As participant 101 explained:

> "the other day the guy across the road was rattling and I said "I've got a bit come on over and I will square you up"…. and I went into the toilet to make it up and he put the kettle on and he's getting his tools and I've put mine down. Obviously they have not been marked. I made the hit up and I picked mine up and I have sooked half of it up and I have picked up his half of it up and when I have been doing that I've went "whose is whose?" And I was positive his was on my left hand side so I gave him the ones that have been on my left hand side. I'm 99½% positive that I was right but there is always that ½% chance that I did mix it up" (Participant 101, interview)

TABLE 6. TYPES OF NEEDLE USED IN 103 ADMINISTRATION EPISODES

Type of needle	No. of episodes
Sterile	54
Pre-used by participant*	48
Previously used by another IDU	1
TOTAL	**103**

*some participants were unsure if their needle/syringe had been pre-used by someone else – see text.

Cohabitants and IDUs sharing the same accommodation also acknowledged that there is a potential mix-up of needles/syringes when they are stored loose in the same place. From the 47 preparation observations involving two or more participants, only 11 (11/47) involved the participants using different methods to distinguish their needles. These methods included burning the plunger end of the syringe, scraping the units on the side of the syringe and pulling the plunger down.

After drawing the drug solution into the needle/syringe and prior to inserting it into a vein, participants often wiped the tip of the needle in some fashion. On 23 (23/103) occasions participants were witnessed wiping their needle tip between their fingers. Needles were also wiped in other ways. They were wiped with a swab 10 times (on one of these incidents the swab had already been used as a heat source), with a tissue three times, twice on a pair of jeans and once on an injector's bare thigh. Licking the needle tip was observed on 12 occasions. When asked why they did this, one IDU replied:

"It's a habit. I don't know why I do it. It removes dirt so I don't have a dirty hit." (Participant 117, audio recording)

- **Injecting sites**

The 103 recorded administration episodes included 38 injections into the arm, 35 into the groin, 11 into the leg, nine into hands, seven into the neck, two into the 'blood bank' (under the upper arm) and one into the stomach. Six of the 30 participants injected into more than one area. One individual injected into her arm, hand, leg and stomach over five observations.

- **Methods of raising veins**

When injecting into the arm the IDU usually needs something to 'tie off' to restrict the blood flow. This causes the veins to bulge out making them more accessible for injection. For all 38 injections into the arm a tourniquet was used. Other methods used to raise veins included sitting in front of a fire, clenching fists and rubbing the injection site.

Two injectors used their neck as their injecting site on seven different occasions. Both relied on other IDUs to administer their injection. The first participant chose to lie upside down on a couch to raise the neck veins. The second lay on a bed. In both cases the individuals held their breath in a controlled manner. This practice helped to make their veins more visible. Close co-operation between injector and recipient was essential in this process.

- **Inserting the needle into a vein**

Once the location has been chosen the needle is then inserted into the vein. To check the needle is properly inserted into the vein the participant will pull back the plunger and check if blood is visible in the chamber. This is the visual confirmation that the drugs contained in the syringe can be delivered intravenously. However it must not be assumed that once an IDU pierces their skin with a needle/syringe that a vein has been successfully located. Researchers witnessed 79 unsuccessful attempts to locate a vein. This occurred when a participant inserted their needle/syringe, pulled back the plunger, saw no blood in their syringe and removed the needle/syringe. Failed attempts occurred when participants were injecting into their arms, hands and legs. All injections into the groin area were administered at first attempt.

- **Administering the drug**

When the blood has entered the syringe, the plunger is depressed to administer the drug. Once the drug had been administered into the bloodstream it was common for 'flushing' to take place. This practice occured after the drug had entered the vein. Before withdrawing the needle the participant would pull back the plunger until blood was again visible in the chamber and then depressed it. During the observation sessions this happened between one and five times per administration depending on the user. This is believed by many drug users to 'flush' the drug round the system. However, although this practice was commonplace, many users thought this was a fallacy and believed that it ruins the quality of their veins.

Twenty-two (22/103) administration episodes involved a participant being injected by someone else. Eleven (11/22) were injected by sexual partners, five by acquaintances and six by close friends. Three episodes involved two participants attempting to inject the same participant. On nine separate occasions an IDU touched their injecting site with their hand and then, without washing, injected another IDU and touched that person's injection site with the same hand.

The amount of time required for administration varied. Success depended on the location of a vein. One participant took 15 seconds and the longest time observed was 19 minutes 24 seconds.

One individual was observed injecting nine times on six occasions. One time it took two minutes to locate a vein and administer his injection in one attempt. Another time he took fifteen minutes and injected in eight different sites on both his hands and arms. During this last administration episode this individual talked about a 'race against time' once blood has entered the syringe. He was referring to time pressure created by avoiding blood congealing in the syringe on occasions when blood had entered the needle/syringe from a non-viable vein.

Post-administration

The post administration stage includes all events which occur once the needle has been removed from the vein. Typical events might include stemming the blood flow from the injection site, the cleaning of syringes, disposal of equipment and the storage of the injecting paraphernalia.

- **Stemming blood**

Once the needle was removed it was common for the participant to wipe their injection site to stem the blood flow. The most common method was to wipe the injection site with fingers (30/103); on only two occasions (2/30) did participants wash their hands afterwards. A swab was used 29 times and a tissue on 28 occasions. On 4 (4/57) of these occasions these bloody swabs and tissues were left lying on a surface without proper disposal. The injection site was licked six times, and wiped with clothing three times. A tourniquet was used once to stop blood flowing. On six occasions nothing was used to wipe the injection site as there was no noticeable blood flow (Table 7).

TABLE 7. METHODS OF STEMMING BLOOD FLOW POST ADMINISTRATION

Method	No. of times used
Wiped with finger	30
Swab	29
Tissue	28
Licked	6
No blood flow	6
Wiped with clothing	3
Wiped with tourniquet	1
TOTAL	**103**

- **Cleaning needles/syringes**

Seventy-one of the 103 administration episodes involved participants flushing their syringe with the same water used in the preparation process (Table 8). Forty-nine (49/71) of these episodes involved two or more participants sharing the same flush water. On only 10 occasions did participants clean their needles/syringes using fresh running tap water from the kitchen or bathroom. On no occasion was bleach used to clean the needles/syringes. It was not known how, or if, needles/syringes were cleaned on 22 occasions. After flush water was drawn into the needle/syringe, on most occasions (93/103) the water was sprayed into a bin, into a plastic bag or down the sink, in the other 10 episodes, flush water was sprayed out of windows and onto carpets.

TABLE 8. CLEANING NEEDLES AND SYRINGES POST-ADMINISTRATION	
Method	**No. of times used**
Flushed in preparation water	71
Unknown	22
Rinsed under fresh running tap water	10
TOTAL	**103**

- **Storage of equipment**

A total of 82 needles were used in the 103 injections episodes observed (some participants re-used their needle/syringe in more than one episode). Twenty-five (25/82) of these needles/syringes were disposed into a cin bin, obtained from a needle/pharmacy exchange. However, it must not be assumed that cin bin disposal means that the needle/syringe will not be used again; the research team witnessed participants re-using needles/syringes from cin bins on a number of occasions. Ten needles were placed into a plastic bag from the pharmacy, 10 into a drawer, seven into a spectacles case, four into a wallet, two into a rubbish bin, two into a cupboard and two into a plastic box. Twenty needles were not disposed of during the time that the researchers were there, but were left lying loose on the preparation surface (Table 9).

TABLE 9. STORAGE AND DISPOSAL OF USED NEEDLES AND SYRINGES (N=82)	
Type of storage	**No. of needles/syringes stored**
Cin bin	25
Left on preparation surface	20
Household containers	13
Plastic bag from pharmacy	10
Drawer	10
Cupboard	2
Rubbish bin	2
TOTAL	**82**

Catering citric acid, used by some injectors to dissolve their drugs was purchased in large amounts and used for weeks if not months. Storage was mainly within a closed container, a plastic bag or within its original packaging.

Participants also stored filters for use at a later date. This storage served two purposes. The first was to use the filter again in the preparation process. The second was known as a 'boil up'. It was common for IDUs to collect filters so that they could heat them with water to extract the excess drug from them. This was useful when they had no money for drugs or early in the morning before they were able to buy more. In the 65 preparation episodes a total of 57 filters were used. Nineteen (19/57) of these filters were kept on the spoon for later use, 12 were kept in a drawer, eight in a closed container, six in a cup, and one in a cupboard. The storage place of 11 filters was unknown. On no occasion did the researchers witness a filter being thrown away (Table 10).

TABLE 10. STORAGE OF USED FILTERS (N=57)	
Type of storage	**No. of needles/syringes stored**
Kept on spoon for later use	19
Drawer	12
Unknown	11
Closed container	8
Cup	6
Cupboard	1
Disposed of	0
TOTAL	**57**

- **Participants living with children**

IDUs living with children generally took greater care in the storage of their paraphernalia during the post-administration stage. They were more likely to display a more systematic approach to tidying up the equipment immediately after administration. This usually meant making sure that all the equipment was stored in a confined space hidden and out of reach of children. Such storage environments included kitchen drawers, the back of a bathroom drawer, the top shelf in cupboards and cardboard boxes placed at the back of a bedroom cupboard.

Impact of harm reduction advice

During the taped interviews, participants were asked about their knowledge of HCV and risk behaviours.

Every member of the study group showed a basic awareness of at least a few safer injecting principles. All of them understood that the practice of sharing needles/syringes was a risky one. This risk was more often associated with contracting HIV than HCV.

Most displayed a basic awareness of a hierarchy of risk; they knew that some injecting practices were riskier than others. Most understood that the sharing of cooker, water, and filters represented a risk but also knew if they used clean needles/syringes as well as a clean cooker, water and new filter that they could share these items, fairly secure in the knowledge that transmission risk would be minimal.

Many IDUs talked of their risk awareness as being a response to visual stimulus. If blood was visible on injecting paraphernalia then IDUs knew that using that item of paraphernalia was something to be avoided.

A fatalistic attitude to taking risks was often observed particularly among IDUs who quoted extremely high levels of HCV prevalence. Phrases like, "90% of junkies have got it anyway" were commonly heard from study participants when talking about HCV.

Crucial to understanding why risky behaviours are continuing despite safer injection messages is that, for most IDUs, harm reduction is only one competing factor amongst many other considerations that contribute to an individual's decision-making process at any one injecting event. Contracting a blood borne virus (BBV) is considered serious but is also viewed by many as a long-term risk and one which may diminish in significance as a contributing factor in the decision-making process especially when that individual has more pressing short-term concerns. Examples of such concerns will be illustrated in Chapter 4.

Most participants maintained that despite greater awareness of the consequences of unsafe injecting they would still engage in risky practices in certain scenarios. Many said they would use or consider using another IDU's previously used needle/syringe if: a) they were experiencing severe withdrawals or b) they did not have a needle/syringe of their own. Other factors shaping an individual's injecting practices include naivety, bereavement, laziness, tendency towards short-term thinking and homelessness. Homelessness could lead to the practice of outdoor injecting. Those who inject outdoors have no access to running water, cannot stock up on sterile injecting equipment, and do not have the luxury of being able to take their time in the preparation process.

In summary, harm reduction messages have to compete with other often more pressing concerns.

Chapter 4: Case Studies

The practice of injecting drugs is not a static phenomenon involving fixed types of equipment and techniques. The following case studies illustrate the **variation** that exists among injectors and highlights the points in the injecting process where risk behaviours for transmission of HCV infection occurs. **Names and some demographic details have been changed to protect the identity of participants.**

Case study 1

Participants: Alan (102) and Mark (103)

Alan is a 39-year-old who has been injecting predominantly heroin for five years following the death of his mother. Mark is a 23-year-old who has been using heroin intravenously for about a year. Their relationship is based on injecting technique rather than friendship. Mark is not confident in his own ability to inject himself and donates a proportion of his drugs to Alan in return for the latter administering his hit for him.

Mark describes the "panic" that descends on him when blood enters his syringe when he is administering his injection. Blood often congeals within the syringe on these occasions and this scenario introduces time pressure into the injection process; Mark does not handle this pressure well:

> "when I get too much blood in it … I end up losing it (*his hit*). So when I feel like that I let Alan do it. (Mark, audio footage, p.15)

This lack of confidence in his injecting technique has in the past placed him in certain risky scenarios. Mark has been affected by these experiences and his injecting behaviour now shows a desire to minimise risks. As will be seen, this contrasts with Alan's more openly ambivalent, almost fatalistic view, on safer injecting practices.

The recorded observation of the two men injecting in Alan's flat, which also doubles as a form of local "shooting gallery", highlights two different approaches to injecting. These approaches are, in turn, connected to restrictions in earning potential and social mobility. Mark is able to move freely, without harassment, through the housing scheme in which he lives. He is also a successful shoplifter. Both factors afford him greater choices with regards his drug taking; choices restricted by his lack of confidence in his injecting technique. Alan's notoriety within the housing scheme has effectively restricted his movements and his reliance on under confident self-injectors to donate some of their drugs in exchange for him injecting them has produced an environment (his flat) in which risky injection practices are endemic.

Having been driven to the local needle exchange by the researchers, Mark decides to visit Alan's flat. Mark will supply heroin in return for receiving his hit; he will also supply citric acid and two sterile sets of needles and syringes. Alan is happy to participate. He will supply a fresh filter (a portion of a cigarette); tap water; his flat and his injecting expertise.

Entering the badly lit flat, visitors have to navigate through piles of old newspapers stacked against the wall of the filthy carpet-lined corridor. Alan is not alone; two other IDUs are also present. Neither of these men have been "squared up" (the practice of taking sufficient heroin to remove withdrawal symptoms) today which creates an uneasy atmosphere. Throughout the 30 – 45 minutes that the research team spend in the flat the doorbell and phone ring constantly: the flat evidently has quite a few visitors. The injecting episode takes place in the living room. The room consists of an armchair and settee arranged around a glass topped wooden table covered with previously used syringes (1mls and 2mls); used filters; electrical wiring and parts; overflowing ashtrays

and tobacco pouches. The centrepiece of the table is a small plastic 500cl. water bottle two thirds full with a dark crimson liquid similar in appearance to blackcurrant juice. Alan later identifies the crimson liquid as the rinse water of multiple IDU visitors to the flat. The bottle represents an improvement in the hygiene standards in the flat because it encourages users to squirt their rinse water into the bottle rather than on the carpets or curtains. Underneath the glass surface of the table are perhaps half a dozen used needles and syringes and literally hundreds of used filters. Alan claims to usually have:

> "about 12 spoons under this table. So if somebody comes up and wants a hit, I gee them a different spoon all the time and a new filter. Basically so that once it's done I'll put the spoons back by again, right? If somebody else wants a hit, I'll gee them a different spoon and a different filter. Basically what it ends up is if I've no got nothing (no drugs) and there's maybe four or five people have had a hit in the house, that will be four or five spoons with filters." (Alan, interview transcript, p.8)

So, in times of drug shortage, Alan will then use these spoons and filters, which contain residue of heroin, to prepare injections for himself until he obtains another supply of heroin.

Mark, in the meantime, conscientiously prepares a hit for two on a space cleared on the table. Having thoroughly cleaned the inside of the spoon with an alcoholic swab, he adds two £10 bags of heroin, the contents of a citric acid sachet and tap water (thirteen units of a 1ml syringe) contained in a glass tumbler and taken from the kitchen. Mark then filters the solution through a new portion of cigarette filter and draws it up into the two sterile needles and syringes. Alan injects Mark first, then himself.

Two occasions of potential transmission risk are observed during the administration and post-administration of this observation. Both place Alan at risk. Firstly, having removed Mark's syringe, Alan wipes Mark's injection site with his hand and then, less than three minutes later, wipes his own visibly reddened groin injection site with the same hand prior to injecting into it. After administering his hit Alan proceeds to rinse out his needle and syringe in the same water that Mark has just used for the same purpose. This water was used in the preparation stage.

Mark later tells the research team that he has recently tested negative for HIV, HBV and HCV but it is unclear whether he has told Alan this.

What is clear is that the way in which Alan supports his drug habit places him in a position of some vulnerability. More often than not Alan surrenders key elements of the preparation process to the IDU who has brought the heroin; despite his seniority in terms of age and injecting experience he watches Mark carefully prepare his hit.

Weeks later during interview Mark responds to a question about him sharing a spoon with Alan on the occasion described above:

> "Aye, but did you not see me using the steriles (swabs)? … least I know it's clean that way. I'll use a couple of steriles swabs and they clean it, they will kill everything. I wouldnae just use his spoon. But he gets offended by that. See when I want to use a sterile (swab) he will get offended by that and I say, "**** *I'm sorry mate but I have been in a situation".* I try to explain to him where I have been stupid before and I shat myself for weeks and weeks and weeks and I'm not wanting to do the same thing again, nae offence tae yae, it's just that I'm no saying you've got it. I've just said I'm no wanting to do that again." (Mark, interview transcript, p.12)

Alan's vulnerability to risk, which arises initially from his social position in the community, is increased further by fluctuations of local drug market. Weeks after the above observation, Mark confirms the research team's suspicions that the dry up of heroin in the city in late March 2003 resulted in the drastic reduction of Alan's visitor numbers. Mark told us that because, "nobody has really had anything and they have no been going to his house when they have been getting some" as a consequence:

> "he will let any **** in his hoose for 20ml." (Mark, interview transcript, p.24)

One of the implications of the method by which Alan supports his habit is that it creates an environment in which adherence to safer injecting practices is difficult. Alan is compromised with whom he injects with and how much he injects. Within this wider context one can better understand Alan's more ambivalent, almost fatalistic attitude towards dangerous injecting habits.

When interviewed Alan is the first study participant to vocalise a fairly dominant belief, held by many IDUs, when he responded to a question about HCV:

> "I havenae been checked for hepatitis or anything, right? Although I'm aware of the fact that about 90% of users that inject it have probably hepatitis." (Alan and Mark, interview transcript, p.43)

He adds that, in his opinion, even if a group of IDUs were preparing hits with separate spoons:

> "…you are still all using the same water, know what I mean? Every body's aware of the fact that if somebody's got hepatitis, there's the chance of you getting it is transferred through the water." (Alan and Mark, interview transcript, p.44)

When prompted about whether sharing injecting paraphernalia was situated in his list of priorities Alan replies:

> "Nine times, it depends on when you are needing the stuff. [If] you are choking for it, it kind of throws a lot of the thingmy oot the windy, know what I mean? Because you're needing it, you're wanting it and you are having it there and then **** the carry on of going through all this rigmarole and daeing that and that, know what I mean? You're wanting it and that's it, know?" (Alan and Mark, interview transcript, p.44).

Case study 2

Participants: Sharon (108), Richard (128) and Jackie (129)

Sharon is a 24-year-old injector of six years. She has recently begun a relationship with Richard, ten years her senior with fifteen years of injecting experience. They live together in Sharon's flat.

When the researchers arrive at the flat at noon the couple's arguing could be heard on the stairwell. Upon entering the flat, the research team are introduced to a second woman, Jackie, who is aged 30 years and has been injecting for 8 years. Jackie is acting as a form of buffer between a visibly tense couple neither of whom have slept for days. Both Sharon and Richard estimate that they have spent between £500 and £600 on cocaine in the last 48 hours.

Over the next three hours we observe Richard and then Sharon prepare two separate half grams of cocaine on the same uncleaned spoon. The three participants inject these two prepared amounts of drug over six injection episodes. The drugs for this observation were purchased using pooled resources from the three participants. The events observed in this session are especially risky because both Richard and Jackie are fully aware of Sharon's HCV positive status and unaware of their own serostatus.

- **Injecting event 1**

Richard prepares the first half-gram. He takes a teaspoon, on which lie traces of residual cocaine powder and a previously used filter, out of a plastic tub placed on the living room table. The tub also contains a set of nail clippers and a small plastic bag containing two used 2ml syringes and some cotton wool. Removing the filter from the spoon, he adds the cocaine powder to the spoon. Once satisfied that the bulk of the powder is on the spoon, he snorts the remainder from the packet. He then asks his partner three times for an insulin needle and syringe before reaching into the cin bin she is holding to select a used set himself. With one exception all of the 1ml insulin needles and syringes that the team observes today are previously used and belong to Sharon. The exception is a set which is used to inject Jackie in this first injecting episode. This set was obtained the day before and had been used on several occasions since then but only by Jackie.

While her partner starts to rinse out the used set of 1mls, Sharon begins to check the sharpness of the needles on multiple sets of insulin syringes which she pulls out of the cin bin. She does this by running the needle tip along the surface of her thumb. Finding a sharp needle is of particular importance at the moment. Her current injecting site is her neck and this has been been extremely sensitive since she asked her partner to inject the contents of some temazepam gel capsules days before this observation.

Richard adds water to the powder on the spoon using the used needle and syringe taken from the cin bin and the water with which he has rinsed these out, thus potentially contaminating the solution. He puts the 2ml syringe, taken earlier from the plastic bag, in his mouth and breaks a portion of cotton wool to use as a filter. Heating the underside of the teaspoon for ten seconds he then stirs the solution for a further 17 seconds with the front end of his used 2ml syringe, another source of potential contamination. Placing the spoon on the table Richard adds a freshly opened blue spike to the used 2ml syringe, thus potentially contaminating the sterile needle.

Richard drops the filter into the cocaine solution and asks Jackie for her syringe. The latter is able to identify her own syringe by at scratch mark on the 1ml barrel. Richard draws up Jackie's share of the potentially contaminated prepared solution and places this on the table beside the spoon. He then measures out his and Sharon's share by drawing up the remainder of the solution on the spoon into the 1ml needle and syringe used in the preparation stage. Richard then squirts half of this solution back onto the spoon and gives Sharon the 1ml syringe containing her share. While Richard draws up his share into his 2ml syringe, Sharon decides that the set her partner has handed her is not sharp enough and backloads the solution it contains into the 1ml syringe that she has been rinsing out.

The administration stage of this first injecting event consists of Richard injecting, firstly, his partner in the neck then Jackie in the wrist and finally himself in the groin.

A quick overview of the journey of each participant's share of cocaine from powder to solution highlights a catalogue of risk events.

The solution that is injected into Sharon has been prepared with water drawn up through a previously used needle and syringe, taken from the cin bin, and stirred with Richard's

previously used syringe. The solution was prepared on an unclean spoon previously shared with Richard and drawn up through the same filter previously used by Jackie.

Jackie's share has been prepared with water that has rinsed out Sharon's and Richard's respective syringes and added to the spoon with a needle and syringe previously used by Sharon. Once heated the solution was stirred using the tip of Richard's 2ml syringe. *N.B: The hollow hub on which the needle is attached to a two-piece syringe allows a space between the plunger and the needle even when the plunger is fully depressed. As a result this type of syringe represents a significantly greater risk when re-used. Laboratory simulation indicates that 2ml syringes may store up to 55 times the volume of residual blood than diabetic syringes.* (Gaughwin, Govan et al quoted in p.694 Grund)

Richard injects his share of solution, which has been prepared with water used to rinse out Sharon's used needle and syringe. He also rinses out his needle and syringe with the rinse water used by Sharon. Finally, his share of the solution is measured by being drawn up into Sharon's used needle and syringe, squirted back onto the spoon and drawn up through the filter previously used for Jackie and Sharon's share.

These events all represent potential opportunities for the introduction of HCV from one IDU to another. Other risky behaviours are observed in the administration of the injections. Having removed the syringe from Sharon's neck Richard applies pressure to the injection site for six seconds with his left forefinger. Less than two minutes later, and without washing his hands in the intervening period, with the same hand he vigorously rubs the area that he intends to inject on Jackie's arm. After her injection, Richard wipes Jackie's injection site with his left thumb. Before injecting himself, Richard removes a plaster from his groin and places it next to the television; he does not clear this up afterwards. The bloodied tissue he uses to stem the blood following his injection is placed in the ashtray on the living room table; again he does not clear this up afterwards. The immediate post-injecting period of this injecting episode consists of a conversation about which dealer might be able to supply the cocaine needed for the participants' next injection. None of the syringes from the first episode are rinsed out or cleaned once they have delivered their solution.

- **Injecting event 2**

Sharon prepares the half gram of cocaine for the second injecting episode on the same spoon used on the previous occasion; it has not been cleaned. Carefully putting the cocaine powder on the spoon, Sharon mutters: "I cannae really remember the last ten minutes" (tape log 4.5). Sharon then tells Jackie to clean out her syringe. The latter moves towards a jug of water which has been changed since the last episode. Sharon tell her not to use this as she may contaminate it with her used needle and syringe.

Sharon adds the new water to the spoon using one of her used and unrinsed syringes thus again potentially contaminating the water. She then heats the solution and stirs it with the plunger end of her used syringe. The same filter as used in episode one is then dropped into the new solution. Sharon begins again the process of checking the sharpness of various needles. The solution is then drawn up into two of her used needles and syringes to confirm the total amount of solution available. Leaving her share in one of these, she then squirts the other two participants' shares back onto the spoon.

Sharon asks Jackie for her needle and syringe and draws up 30ml (3 units of a 1ml syringe). She then draws up the same amount into her partner's 2ml syringe, announcing that she's taking "40ml" (4 units of a 1ml syringe).

Richard gives Sharon her injection and, afterwards, places his left forefinger on the injection site for two seconds. Sharon attempts to administer Jackie's share and

succeeds only in producing a trickle of blood from Jackie's forearm. Sharon tries again but eventually admits defeat. Jackie pulls her arm away and waits for Richard to give her a tissue to mop up the blood. Jackie's needle and syringe have become blocked with congealed blood by this time. Taking over the task of injecting Jackie, Richard tries to clear the blocked needle and syringe by drawing up some water from the jug on the living room table. When it is confirmed that the tools are blocked Sharon says to Jackie:

Sharon: I've got tools that have only been used once or twice….if you want, you can, you know the only thing I've got is Hep C.
Jackie: I've got the same as you…
Sharon: It's up to you.
Jackie: The two of us have got Hepatitis C that willnae dae anything, will it?
Researcher: We can go and get some more tools for you if you want.
Jackie: I'll use her ones, is that alright?

With this decision made Richard backloads Jackie's share of the solution from the "blocked" needle and syringe into a used set without rinsing out the latter. Meanwhile, one of the researchers speaks to Jackie:

Researcher: You've definitely got HCV that you know of?
Jackie: Uh huh, oh aye. I went up to the doctors and I got tested for a lot of things and, eh, just a couple of weeks ago.
Researcher: And you came out positive?
Jackie: Aye.
Researcher: Are you sure it was Hep C?
Jackie: Aye.

A fortnight later, Jackie is interviewed along with another participant, Eamon. Eamon explained that he had been tested for hepatitis C and other blood borne viruses whilst in prison. To which Jackie responded "I've not got checked".

Richard then takes over and delivers Jackie's injection and, finally, injects himself. Having injected Jackie, Richard places his visibly dirty and possibly blood contaminated left thumb over Jackie's injection site. He then puts the two used syringes and needles, uncapped, next to the television and puts his own uncapped set on a shelf after he self-injects.

Clearing up after the two observed injecting episodes is minimal. Needles and syringes are left lying, uncleaned and uncapped. Bloody tissue paper is left lying on the carpet and in the ashtray. Richard's hands, with visible open wounds, have injected all three participants; the research team do not observe him ever washing his hands at any stage.

Interviewed weeks later, Sharon and Richard discuss how they became aware of blood borne viruses (BBVs) and provide some reasons for their risk behaviours.

Sharon describes herself as a "naïve lassie" (Sharon, interview, p.2) when she started her injecting career. She openly admits to sharing syringes, spoons, filter and water with her first sexual partner, now dead from a drug overdose. She admits to sharing spoons, filter and water with subsequent sexual partners and says she only became aware last year, i.e. 4/5 years into her injecting career, of the dangers of BBV transmission and their association with sharing syringes and other paraphernalia. This discovery arose from an ex-boyfriend revealing his HCV positive status and prompted her to be tested. The test results confirmed that she was HCV positive. Sharon admits that harm reduction advice did not penetrate her thinking during these first 4/5 years of her injecting career because: "well, having been mad with it I never took it on board know what I mean?" (Sharon, interview, p. 5). She continues:

> "A year ago, **** came up to me and told me he had hep. I went in and got tested for HIV, everything and the only thing that came back (positive) was hepatitis C. I've no been getting my treatment done for that either. I'll need to cos you see a tinge of yella about ma white bits (of her eyes)? (Sharon, interview transcript, p.5)

She classifies HIV as a BBV with far greater stigma attached to it. Sharon admits that her knowledge of the HCV is still patchy. Recently, Sharon had a scare when she found her son holding a used razor. As a result, she had him tested for BBVs (he tested negative). This fright prompted Sharon to read up about HCV. Despite this, and her fairly recently acquired awareness of BBVs, Sharon admits that this does not consistently translate itself into safer injecting behaviours:

> "But there have been times, I mean, I have been that mad with it I canny remember then what I have done. But I am gonny go and get myself tested again." (Sharon, interview transcript, p. 7)

In contrast, Richard's recollection of his injecting career shows an early understanding of BBV transmission risk and the importance of taking precautions. His own initiation into injecting occurred when he was aged 18 and his early injecting career was characterised by occasional injecting of amphetamine and adherence to safer injecting principles. His awareness of injecting risks arose from visiting a needle exchange.

> "They had a wee leaflet not to share tools, not to share water, not to share filters and all that … (Richard, interview transcript, p.5)

At that time, Richard was married with a child. He explained his wife's concerns when she discovered that he was injecting:

> "She was worried about the AIDS, "what about me, what about the wean?". AIDS this, AIDS that. And I explained to her, I says "listen, that's my stuff up there, naebody uses that apart from me so there is no way I can catch anything, there is no way I can pass anything on to you." (Richard, interview transcript, p. 7)

Following a separation from his wife Richard moved into hostels and it was here that he began injecting heroin at the age of 27 years. Richard insists that he has never shared a set of syringes in his fifteen-year injecting career. He does admit that the combination of moving into hostel life and developing a heroin habit has seen an occasional loosening of his standards with regards the sharing of other paraphernalia. He describes sharing of all injecting paraphernalia in hostels as a common factor:

> "You are more likely to share in a hostel because people think when you are in a hostel it's the end of the line know what I mean? You canny go any lower apart from skippering. So you are like that what the ****." (Richard, interview transcript, p. 9)

On one occasion in his room in a hostel Richard recalls sharing a spoon and water with other IDUs:

> "I think it was the fact that I was habited up with the kit and I was just pure rattling (withdrawing) and I couldnae be bothered walking away round to West Street to go to the needle exchange to get a new set of tools and walk away back up. I just wanted it there and then and I'd a brand new set of tools. But I never had my ain spoon, I never had my ain

> water or my ain filter. So I just used theirs." (Richard, interview transcript, p. 7)

It is obvious from Richard's account that he considers his behaviour in the hostel setting as the only time at which he has put himself at risk. His actions with Sharon — sharing water, spoons and filters — are not recollected as risk behaviours.

Case study 3

Participants: Rachel (116) and Margaret (117)

Rachel, aged 28 years, and Margaret, one year younger, have been a couple for three years. Rachel has been injecting drugs for seven years but has recently returned to mainly smoking heroin; she injects if the couple have only a £10 bag between them. Rachel informs us that, despite having been an IDU for so long, she has never learned, or wanted to learn, how to prepare a hit or inject herself. These duties were, for the main part, the responsibility of Rachel's ex-boyfriend and, in the last three years, of Margaret. Despite being a year younger than her partner, Margaret has been injecting for eleven years and describes herself as the dominant half of the relationship.

Whilst Margaret searches the flat frantically for a packet of catering citric acid (which is found under the couch) Rachel prepares her foil for a 'toot'. There is no storage regime in evidence here and this does not change throughout the observation. In response to researcher's question about cin bin use, Margaret states that they do not have a cin bin because it is 'too obvious'. This refers to the fact that the 'woman from housing' who organised their flat five weeks ago has a key to their flat and therefore access. The housing officer believes that they use only methadone.

Margaret prepares her hit on a small living room table. She asks her partner for a cigarette (to use a portion of its filter). She puts the filter onto the spoon first then, having bitten open a £10 bag, adds the heroin to the spoon. It is at this stage that Rachel, having 'tooted' a line of her bag, decides that the heroin is 'jagging kit', i.e. not suitable for smoking, and that she would rather Margaret inject her with what is left of her £10 bag.

Margaret continues preparing her own hit, adding one big pinch of catering citric acid and 1ml of tap water. Having self-administered her hit in the groin, she places the used needle and syringe in the cup of water. Less than five minutes later she uses the same water to prepare Rachel's hit. Thus, Margaret's flush water is Rachel's preparation water. Rachel's hit is drawn up into a sterile needle and syringe on this occasion.

Just after Margaret has had her hit the research team ask whether the couple would ever share needles and syringes? Both reply that they would share with each other but no one else. Rachel adds afterwards that she knows about her partner's HCV+ status (Margaret was diagnosed as HCV a few years ago) but states that 'it doesn't bother her'. She then states that she has only shared tools with Margaret and, on three occasions, with her ex-boyfriend.

At this time in their lives, both Margaret and Rachel place the risk of contracting BBVs low down in a list of multiple concerns that the couple face.

Less than a week prior to our observation, Margaret was attacked and raped near her home. In addition to this, Margaret knows that she is likely to be lifted for multiple arrest warrants anytime she ventures into the city centre. Throughout the next five meetings with the couple, Rachel also reveals herself to be an individual still numbed by the death of her mother amongst other individual tragedies. Recalling this period Rachel told the research team:

> "See after ma Ma died I used to go into ma room every single day and O.D… I was pure wrecked with what happened with ma Ma." (Rachel/Margaret, audio footage, p. 46/7)

Case study 4

Participant: Jamie (114)

Jamie is a 27-year-old who has been injecting since he was aged 20 (with some periods of respite and rehabilitation). Over the course of two months we observe Jamie inject four times. Jamie was sleeping rough in the city centre at the time of fieldwork, save for a six-day period in a residential detoxification centre.

The first three events involved Jamie injecting alone and in an outdoor environment. Two of these occasions were in a rarely used city centre backyard near to his begging pitch and the third occasion was in a disused concrete shelter on rail track waste ground near his skipper (regular patch for sleeping rough). The last occasion was in his friend's flat.

Throughout these four observed injecting episodes Jamie shows both a commitment to self-sufficiency in terms of carrying required injecting paraphernalia on his person and a commitment to protect himself against BBVs.

On all four occasions he prepares his hit, a £10 bag of heroin, on the upturned base of an aluminium drinks can. He uses a fresh blue needle on a 2ml syringe on the first and fourth time he is observed. The remainder of occasions he uses a pre-used (by himself) needle and syringe. On two occasions he filters the heroin solution through a freshly ripped portion of cigarette filter and on the other two episodes, the filter has been used previously. The solution is always prepared with catering citric acid stored in a plastic tub.

On the first day of observation, water is not carried on his person; instead, a 500ml bottle of mineral water is hidden inside a black bin bag in the backyard. On that day Jamie explains that the water is almost two weeks old and that this size of bottle usually lasts him for a fortnight. Three days later, injecting in the same backyard, Jamie produces a small brown methadone bottle containing tap water (re-filled in public toilets, etc) to prepare his hit. We see this bottle on his person for the remaining observed events. On our third observation Jamie identifies this water container as, "his friend's old methadone bottle," (Researcher field notes, third session with Jamie). This bottle represents Jamie having all the equipment he needs to prepare and administer his own injections.

After injecting on each of these occasions, Jamie pours some water onto either the aluminium base or the cap of the methadone bottle to rinse out his needle and syringe.

On the fourth occasion, he is observed injecting indoors in his friend's, (Ian (123), flat). Both men prepare with their own individual equipment (they each have a £10 bag of heroin). Jamie uses this opportunity to not only re-fill his portable water bottle but to wash his hands prior to preparing and administering his hit. **He is the only participant in the study to do this.**

Jamie appeared to be an exception to the rule, as seen in other research, that "roofless" drug users are particularly prone to high-risk behaviours (Neale 2001). Whilst he engages in the acknowledged high-risk behaviour of injecting drugs, the manner in which he does so displays a highly developed understanding of the risks involved.

Jamie explains that his avoidance of the risk of BBVs is centred around AIDS and not hepatitis. The main motivation driving his safer injecting precautions was the fear of contracting HIV at the start of his injecting career. Jamie has never shared needles and syringes because "that's how you catch AIDS and I didn't want to share tools" but he has shared other injecting paraphernalia (Jamie, interview, p.6). Jamie describes how his move into hostel life, "skippering" (sleeping rough) and homelessness in the city centre has resulted in him increasing his knowledge about HCV and how the disease is transmitted through injecting practices, including paraphernalia. He "read things in the jail and leaflets out of West Street." (Jamie, interview, p.7) and through this information began to modify his injecting practices. Jamie explains this evolution in his behaviour:

> "…before that I didnae know about hep, that you could get it through injecting and stuff, using filters and that. Because I thought you could only catch it through blood so I was only using *(sharing)* filters, spoons. I didn't know you could catch it through anything like that until I read a leaflet about it and that's when I stopped, that's when I started carrying my own stuff about with me." (Jamie, interview transcript, p. 8)

Happily, Jamie's approach has resulted in negative results in several tests he has had in the last few years. His last negative result came at the end of March 2003 in between our third and fourth observations with him:

> "The guy came and seen us. Took my blood and that. Three days later he was back…. He's like that "there isn't any bad news….you are all clear". I says, "for everything?" and he's like "aye". Had a nice green slip — it's in my bag at my skipper." (Jamie, interview transcript, p. 13)

It seems that Jamie's relatively safe injecting habits result firstly from him absorbing harm reduction messages and, secondly, from his preference of "skippering" (sleeping rough) to hostel life. Jamie's strong dislike of hostel life was made clear to the researchers with him claiming that "**** will use anything in there." (Jamie, interview, p. 16). He adds that one of the benefits of sleeping rough in his eyes is that:

> "At least I'm on my own and don't have other people breathing down my neck looking for a bit of kit off me." (Jamie, quoted in field notes)

In Jamie's case sleeping rough has produced a safe injecting practice with regard to BBVs. When asked how he would react to a withdrawal scenario in which he did not have his own injecting paraphernalia he states that he would, "probably go down to West Street" rather than share another IDU's syringes.

Nevertheless, some of his practices (storing and using the same bottle of water for weeks, storing and reusing filters) put him at some risk of acquiring bacterial infections.

Chapter 5: Discussion and Conclusions

This study is the first ever in the UK to combine ethnographic methodology with video recording to investigate the details of the drug injecting process. A recent study in Australia (Carruthers, 2003) also filmed injecting practices but it is not clear the extent to which respondents were recorded in their own natural settings.

The main objective of the study was to examine the mechanics of injecting in order to determine any ways, as yet not fully understood, in which HCV can be transmitted between IDUs. Other objectives were to contextualize these practices and to gain some understanding of IDUs knowledge of HCV transmission risks and harm reduction techniques.

A total of 30 IDUs were recruited to the study. The aim was to recruit injectors with varying lengths of injecting career and from different life situations. Among the 30 participants, injecting careers ranged from two weeks to 21 years; five were homeless.

As with any qualitative study, the sample size is small and the results may not be generalisable to other injecting populations. Moreover, in addition to this usual caveat for qualitative work, there were other issues raised by this study which should be noted by those who may want to undertake similar research in the future:

1. Firstly, ethical approval was difficult to obtain and it took a considerable length of time for approval to be granted.

2. Secondly, insufficient time was allowed in the original proposal for analysis. It was difficult at the outset to predict how much time would be required for analysis as no previous video studies of injecting practices have been undertaken previously. Rather than the original three months with one researcher which was originally proposed, the time taken to analyse the data sufficiently was four months with two researchers and input from audio-visual analysis experts.

3. Thirdly, a longer period of fieldwork would have yielded both a larger sample and more insight into the lifestyles of the participants involved in the study. The issue of bias, or of altering behaviour, by the presence of researchers and a video camera was raised in the chapter on Methodology. Whilst the researchers' impression was that no change in behaviour occurred as a result of their presence, a longer time spent with individual participants or groups of participants would have allowed a greater degree of certainty that the actions depicted on the video were "natural" and not biased by the presence of a research team and camera.

Despite these issues, the results clearly showed that there are multiple ways in which IDUs put themselves at risk of HCV transmission during the injecting process.

To become infected with HCV, the individual must come into contact with the blood of an infected person. The most common route of HCV transmission is injecting drug use (Wodak et al, 1996). The most obvious route of HCV transmission is for an IDU to inject with a needle and syringe previously used by a potentially infected injector. Only one such incident (1/103 injections) of direct sharing occurred in this study. This, together with oral reports from respondents, indicates a high level of awareness by IDUs of the risks involved in sharing needles/syringes with others. An understanding, however, of occasions when indirect sharing of needles/syringes could occur, and the risk this poses, seemed less well understood. Such indirect sharing of potentially infected needles/syringes and the sharing of other potentially infected injecting paraphernalia was more common. These possible routes of transmission will be discussed below along with the implications for harm reduction messages and public health policies.

Participants invariably injected with their own, or what they regarded as their own, needle/syringes. Just over half of the injection episodes (54/103) involved the use of new, sterile, needles/syringes. The potential for transmission arose in the episodes (49/103) in which participants injected with previously used needles/syringes. Apart from the one IDU who was seen to inject with another's needle/syringe, the participants in the other 48 injection episodes believed that their pre-used needles had been used only by themselves. However, some participants admitted that they have may have used another person's needle/syringe by mistake. This could happen in two ways. Firstly, cohabiting IDUs often stored their used needle/syringes next to each other's and then had difficulty in distinguishing one from another. Secondly, needle/syringes could be confused where two or more people were injecting together, put their needle/syringes down next to each other's and then could not tell which was theirs. By far the most common type of needle/syringe used by IDUs in the study was the fixed 1ml insulin needle/syringe. This was used in 85% (88/103) of all injections. On only eleven occasions were these needle/syringes observed as marked in some way that could differentiate them from those belonging to other IDUs.

The utilisation of a pre-used needle/syringe in the preparation of drug solute for more than one injector is another, and perhaps more common way in which needle/syringes can be shared indirectly. Almost two-thirds of the video sessions involved groups of two or more IDUs injecting together. It was common to prepare drugs in one batch for all participants; this being the most efficient way to divide drugs bought with pooled resources (Koester et al, 2003). Pre-used needle/syringes were used to draw up preparation water; inserted into shared filters; used to measure drug solution; and then squirted solution back onto a spoon for injection by another IDU. Although the used needle/syringe does not come into direct contact with another IDU in such circumstances, it potentially could contaminate any or all of the other injecting paraphernalia or drug solution. (Koester et al, 2003).

Flush water, used to rinse out needle syringes after injection, was another potential source of infection if, as was common in the study, the same container of water was used consecutively by different IDUs who later re-used the same needle/syringes. Uncleaned spoons and filters, potentially contaminated in the way described, were commonly stored for re-use.

Blood-to-skin contact is generally regarded as a low transmission risk, but in circumstance where this happens frequently, or where skin is broken, this can increase the risk (Carruthers, 2003). IDUs were seen placing bloody fingers on another's injection site and leaving bloodied tissues or cotton wool on tables and other surfaces.

While the main aim of the study was to identify risk behaviours for HCV, many of the behaviours recorded, particularly those related to hygiene, also have potential for the development of bacterial infections such as abscesses, ulcers, necrotic tissue and inflammation, all of which are common among IDUs.

The level of hygiene was generally low. In only one (1/103) injection administrations did a participant wash their hands prior to injecting. A swab was used to clean the injection site prior to injection in only 20 (20/103) occasions. On no occasion was the preparation surface wiped before use and on 15 (15/65) the surface was visibly unclean. Of the 57 filters used in the preparation episodes, none were disposed of, and eight were kept in closed containers, highly conducive to the development of anaerobic bacteria. The re-use of filters was implicated in the recent outbreak of *clostridium novyi* infection among IDUs in Scotland (Taylor et al, unpublished data).

Most of the study participants were aware of BBVs and how they were transmitted. However, the circumstances of their lives and drug habits acted as obstacles to the practice of safe injecting.

IDU populations are not comprised of isolated individuals but small groups of two or more participants whose relationships are promoted and strengthened through the common interest and practice of injecting. They share strategies to procure both the money for drugs and the drugs themselves. As a consequence of the intensity of injecting and their interdependence on one another, blood which might be infected can pass from one to another.

The preparation and injecting of drugs is highly complex. Even for those who fully understand how to prevent contamination of equipment and drug solute from blood, the process of preparation and injecting are riddled with pressures which may result in sub-optimal practices with regard to preventing transmission of BBVs. For example, when IDUs are injecting together the controlling person is usually, although not always, the one who has supplied the drug. Those not in control may need to compromise their desire to inject safely because they do not have the same leverage as the controller in the ways that drugs are prepared and injected. Thus, interdependence and negotiation results in compromise and risky injecting practices with regard to BBVs.

Further pressures around injecting and its accompanying lifestyle add to the difficulties in practising safe injecting. Fear of blood congealing in the syringe imposes time constraints which may result in short-cuts being taken or mistakes being made, all of which may result in risky injecting with regard to infection; fear of insulting people by engaging in safe injecting practices, which suggest that the person is infected, lead to sharing injecting paraphernalia. Following injecting, the need to quickly stem blood with a finger so that the integrity of the vein is maintained, can involve blood-to-skin contact between injectors. The practice of rinsing needle/syringes after injecting, which may remove a potential source of infection, is offset by the desire to preserve residual drug on spoons and in filters and by the storage of these needles/syringes for later use.

What does all this mean in terms of harm reduction?

The messages arising from our findings are clear. Injectors should be warned clearly that they should share none of the parts involved in the preparation of drugs for injecting or in the post-injecting stage. This message should include the sharing of drugs. IDUs should be advised that each individual should make up their own drug solution using new equipment each time. If it is not always possible to use brand new equipment, injectors should ensure that they inject with used equipment that they can guarantee has not been used by anyone else. To ensure that IDUs can comply and implement these harm reduction strategies, they must have the resources to do so.

If a sterile needle/syringe was used at each injection episode it would eradicate the contamination of other paraphernalia such as spoons and filters. Re-use of needles/syringes was common amongst participants in this study. Much of this re-use arose from IDUs not having clean, sterile equipment at the time of need. **It is important that IDUs have the potential to use a sterile needle/syringe for each injecting episode.** This has obvious cost implications, especially in light of the new legislation which now allows health boards to provide other injecting paraphernalia. In essence, needles/syringes are central to the injecting process and act as a conduit between contaminated blood and potentially all other items of injecting paraphernalia. Therefore, if health boards have to make a choice between which paraphernalia to provide, the choice, as far as blood borne viruses are concerned, should err on the side of needles/syringes.

The recent increase in number of needle and syringes which can be given to IDUs at any one time will hopefully reduce the need for needle/syringe re-use (Scottish Executive HDL (2002) 90) and an evaluation of this change is currently underway. However, this

increase will only be effective if IDUs have access to the facilities which provide needles/syringes. A common complaint from respondents was that, with the exception of one service, all other exchange facilities were not open at convenient times. **Consideration should be given to increasing the number of services providing 24 hour access, or to making clean equipment available through other means such as vending machines.**

Despite best efforts, there will still be some IDUs who continue to store needle/syringes for later use. **Consideration should be given to producing the commonly used fixed 1ml set in different colours so that cohabiting IDUs, for example, can distinguish each other's equipment.** This goes against the grain of harm reduction messages encouraging the use of only new equipment but may be a pragmatic development given the lifestyles of injectors as described above.

IDUs should also be given the opportunity to learn more about the ways in which injecting paraphernalia can become contaminated at various stages in the injecting process. Injectors are not immune to harm reduction messages, as seen in their knowledge of the risks involved in the direct sharing of others' needles/syringes and their avoidance of this activity. If they understood more about the implications of indirect sharing, this may also have a positive impact on their risk behaviours. **IDUs need more information about the various ways in which different pieces of equipment can become contaminated in the process of drug preparation. This could be achieved through a training video, posters and leaflets demonstrating risk practices.**

In addition to the risk behaviours for BBVs, the practice of poor hygiene put IDUs at risk of bacterial infections. **Health promotion materials should be developed which emphasise the need for hygienic practices,** particularly the washing of hands before and after injecting, the swabbing of skin prior to injecting, and the cleaning of preparation surfaces. The finding that some IDUs use swabs as a heat source to dissolve drugs makes it imperative that sufficient swabs are made available to IDUs.

Such harm reduction developments would hopefully reduce many of the risk behaviours outlined in this report. However, as the results have shown, there are a myriad of pressures on IDUs which conspire against the practice of safer injecting to protect them from BBVs. Some of these arise from the desire to "beat the clock" to prevent needles becoming blocked by congealing blood, often among those who have been injecting for some time and have poor veins or newer injectors with poor injecting techniques. Others arise from social circumstances, such as homelessness.

Observations supported the notion that IDUs injecting indoors had more opportunity to inject according to safer injecting principles than outdoor injectors. The advantages that indoor injectors have are: a) access to running water; b) the ability to stock up on sterile injecting equipment; and c) the luxury of being able to take their time during the process. In contrast outdoor injectors are faced with circumstances that may lead them to make risky choices. The most pressing obstacle to safer injecting is concerned with the lack of access to running water. Water used in outdoor injecting events is usually contained in a small plastic water bottle either bought from a local shop or filled up in a public toilet. This water is used both to prepare drugs for injecting and rinse out needle/syringes. Keeping bottled water for re-use in subsequent injecting events is commonplace and if shared presents a risk for transmission of HCV. From observations, outdoor injecting events involving large groups of IDUs sharing equipment are probably rare. By definition, congregations of large groups of IDUs within the city centre attract unwanted attention from the police and general public. The main cause for concern with regards to the transmission of HCV amongst outdoor injectors is the lending of core equipment to others in need.

One method of dealing with the harms associated with poor injecting techniques and of injecting outside would be to provide **safe injecting rooms,** particularly in the city centre where outdoor injecting is most common. Evaluations of safer injecting rooms indicate that these facilities have improved the health and social functioning of IDUs, risk behaviours for BBVs, and use of drugs in public (Kerr et al, 2003). A study evaluating the potential use of such facilities in Canada found that those who required help with injecting, those who had difficulty in accessing sterile needles/syringes and those who injected in public would be willing to use such a service (Wood et al, 2003).

Many of the pressures experienced and risk behaviours exhibited by IDUs arise from one simple fact: the intensity of desire for drugs to stave off withdrawal symptoms. This intensity is in complete inverse proportion to the desire to practice safe injecting. Many of the risks — preparing drugs communally, storing used filters and spoons — arose out of the need to ensure that they received the maximum amount of drug possible. A minimum of just under half of the sample were receiving methadone at the time of the study. Despite this treatment, the injectors required to "top-up" with heroin. Elsewhere, methadone maintenance therapy has been shown to reduce, but not eliminate, the practice of injecting (Hutchinson et al, 2000; Simeons et al; 2002). Inadequacy of dose may be a factor influencing the continuation of injecting. In the interests of preventing the transmission of BBVs, **harm reduction policy should include the provision to injectors of adequate doses of methadone or other substitute medication which would enable the cessation of injecting**.

Most participants maintained that despite greater awareness of the consequences of unsafe injecting they would still engage in risky practices in certain scenarios. Many said that they would use or consider using another IDU's used needle/syringe if: a) they were experiencing severe withdrawals, or b) they did not have a needle/syringe of their own. Other factors shaping an individual's injecting practices include naivety, homelessness, bereavement, laziness, a tendency towards short-term thinking and homelessness. These factors clearly affect the injecting practices of some IDUs more than others. The examples of Mark (103) and Jamie (114) illustrate that some IDUs have taken heed of harm reduction advice and translated it broadly into safe injecting practices which display a form of long term thinking. What is clear is that whilst harm reduction professionals may analyse injecting practices in isolation such distinctions are not made within the mind of an IDU. Rather, harm reduction messages have to compete inside the minds of IDUs with other often more pressing concerns. Safer injecting advice has made some impact and translated into improvements in terms of reducing some risk behaviours but has not eradicated unsafe practices. The findings from this research should enable harm reduction practitioners and policy-makers to address these issues more effectively.

Appendix 1: Video Recorded Injecting Events

INJECTING EVENT 1 (N=1) - 27/01/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	101	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 2 (N=1) - 29/01/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	101	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 3 (N=2) - 30/01/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	102	Acquaintances	Prepared by 103 Heroin	Self-administered and administered 103
M	103	Acquaintances	Prepared for self and 102 Heroin	Administered by 102

INJECTING EVENT 4 (N=2) - 03/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	104	Co-habiting, sexual partners	Prepared for self and 105 Heroin	Self-administered and administered 105
F	105	Co-habiting, sexual partners	Prepared by 104 Heroin	Administered by 104

INJECTING EVENT 5 (N=2) - 04/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	106	Shoplifting Partners	Prepared for self and 107 Heroin	Self-administered
M	107	Shoplifting Partners	Prepared by 106 Heroin	Self-administered

INJECTING EVENT 6 (N=1) - 04/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	101	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 7 (N=1) - 06/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	103	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 8 (N=2) - 10/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	104	Co-habiting, sexual partners	Prepared for self and 105 Heroin	Self-administered and administered 105
F	105	Co-habiting, sexual partners	Prepared by 104 Heroin	Administered by 104

INJECTING EVENT 9 (N=2) - 11/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	106	Shoplifting Partners	Prepared for self and 107 Heroin	Self-administered
M	107	Shoplifting Partners	Prepared by 106 Heroin	Self-administered

INJECTING EVENT 10 (N=2) - 25/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	104	Co-habiting, sexual partners	Prepared for self and 105 Heroin	Self-administered and administered 105
F	105	Co-habiting, sexual partners	Prepared by 104 Heroin	Administered by 104

INJECTING EVENT 11 (N=3) - 26/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	110	Co-habiting, sexual partner with 112	Prepared by 111 Heroin	Self-administered
M	111	Brother of 112	Prepared for self,110 & 112 Heroin	Self-administered
F	112	Co-habiting, sexual partner with 110	Prepared by 111 Heroin	Self-administered

INJECTING EVENT 12 (N=2) - 27/02/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	102	Acquaintances	Prepared by 103 Heroin	Self-administered and administered 103
M	103	Acquaintances	Prepared for self and 102 Heroin	Administered by 102

INJECTING EVENT 13 (N=3) - 03/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	104	Co-habiting, sexual partners	Prepared for self and 105 Heroin	Self-administered and administered 105
F	105	Co-habiting, sexual partners	Prepared by 104 Heroin	Administered by 104
F	113	Acquaintance of 105	Prepared own Heroin	Self-administered

INJECTING EVENT 14 (N=1) - 03/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	114	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 15 (N=3) - 04/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	110	Co-habiting, sexual partner with 112	Prepared for self 111 & 112 Heroin	Self-administered
M	111	Brother of 112	Prepared by 110 Heroin	Self-administered
F	112	Co-habiting, sexual partner with 110	Prepared by 110 Heroin	Self-administered

INJECTING EVENT 16 (N=1) - 05/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	115	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 17 (N=1) - 06/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	114	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 18 (N=2) - 06/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	116	Co-habiting, sexual partners	Prepared by 117 Heroin	Administered by 117
F	117	Co-habiting, sexual partners	Prepared for self and 116 in 2 separate preparation episodes. Heroin	Self-administered and administered 116

INJECTING EVENT 19 (N=3) - 10/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	110	Co-habiting, sexual partner with 112	Prepared by 111 Heroin	Self-administered
M	111	Brother of 112	Prepared for self, 110 & 112 Heroin	Self-administered
F	112	Co-habiting, sexual partner with 110	Prepared by 111 Heroin	Self-administered

INJECTING EVENT 20 (N=1) - 11/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	117	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 21 (N=1) - 11/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	119	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 22 (N=3) - 12/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	104	Co-habiting, sexual partners	Prepared for self and 105 Heroin	Self-administered and administered 105
F	105	Co-habiting, sexual partners	Prepared by 104 Heroin	Administered by 104
F	113	Acquaintance of 105	Prepared own Heroin	Self-administered

INJECTING EVENT 23 (N=1) - 13/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	114	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 24 (N=4) - 17/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	110	Co-habiting, sexual partner with 112	Prepared for self, 111,112 & 120 Heroin	Self-administered
M	111	Brother of 112	Prepared by 110 Heroin	Self-administered
F	112	Co-habiting, sexual partner with 110	Prepared by 110 Heroin	Self-administered
F	120	Friend of 112	Prepared by 110 Heroin	Self-administered

INJECTING EVENT 25 (N=2) - 18/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	119	Friends	Prepared own Heroin	Self-administered
M	121	Friends	Prepared own Heroin	Self-administered

INJECTING EVENT 26 (N=1) - 20/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	122	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 27 (N=2) - 25/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	116	Co-habiting, sexual partners	Prepared by 117 Cocaine	Administered by 117
F	117	Co-habiting, sexual partners	Prepared for self and 116 Cocaine	Self-administered and administered 116

INJECTING EVENT 28 (N=2) - 25/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	119	Friends	Prepared for self and 121 Heroin	Self-administered and administered 121
M	121	Friends	Prepared by 119 Heroin	Administered by 119

INJECTING EVENT 29 (N=2) - 26/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	123	Acquaintances	Prepared own Heroin	Self-administered
M	124	Acquaintances	Prepared own Heroin	Self-administered

INJECTING EVENT 30 (N=2) - 27/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	122	Acquaintances	Prepared for self and 125 Heroin	Self-administered and administered 125
M	125	Acquaintances	Prepared by 122 Heroin	Administered by 122

INJECTING EVENT 31 (N=2) - 31/03/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	104	Co-habiting, sexual partners	Prepared for self and 105 Heroin	Self-administered and administered 105
F	105	Co-habiting, sexual partners	Prepared by 104 Heroin	Administered by 104

INJECTING EVENT 32 (N=2) - 01/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	119	Friends	Prepared for self and 121 Heroin	Self-administered and administered 121
M	121	Friends	Prepared by 119 Heroin	Administered by 119

INJECTING EVENT 33 (N=3) - 02/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	113	Acquaintance of 126 / 127	Prepared own Heroin	Self-administered and attempted to administer 127
M	126	Friend of 127 and acquaintance of 113	Unknown Heroin	Self-administered and administered 127
M	127	Friend of 126 and acquaintance of 113	Unknown Heroin	Attempt administer by 113. Administered by 126

INJECTING EVENT 34 (N=2) - 03/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	108	Co-habiting, sexual partners	Prepared for self and 128 Cocaine	Administered by 128
M	128	Co-habiting, sexual partners	Prepared by 108 Cocaine	Self-administered and administered 108

INJECTING EVENT 35 (N=2) - 07/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	108	Co-habiting, sexual partners	Prepared for self and 128 on 1st and 3rd preparation episodes 2nd preparation episode by 128 Cocaine	Self-administered on 1st and 2nd administration Administered by 128 on the 3rd
M	128	Co-habiting, sexual partners	Prepared for self and 108 on 2nd preparation episode 1st and 3rd preparation episodes by 108 Cocaine	Self-administered on all 3 administration episodes and administered 108 on 3rd

INJECTING EVENT 36 (N=2) - 09/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	119	Friends	Prepared for self and 121 Heroin	Self-administered and administered 121
M	121	Friends	Prepared by 119 Heroin	Administered by 119

INJECTING EVENT 37 (N=2) - 11/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	110	Co-habiting, sexual partner with 112	Prepared for self & 112 Heroin	Self-administered
F	112	Co-habiting, sexual partner with 110	Prepared by 110 Heroin	Self-administered

INJECTING EVENT 38 (N=1) - 14/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	122	Injecting alone	Prepared for self Heroin	Self-administered

INJECTING EVENT 39 (N=2) - 15/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	114	Acquaintances	Prepared own Heroin	Self-administered
M	123	Acquaintances	Prepared own Heroin	Self-administered

INJECTING EVENT 40 (N=1) - 16/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	113	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 41 (N=3) - 16/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	108	Co-habiting, sexual partners	1st preparation episode by 108 Prepared for self,128 and 129 on 2nd preparation episode Cocaine	Administered by 128 on the 1st and 2nd administration episodes Aborted administration of 129 on 2nd administration episode.
M	128	Co-habiting, sexual partners	Prepared for self, 108 and 129 on 1st preparation episode 2nd preparation episode by 108 Cocaine	Self-administered and administered 108 and 129 on both. administration episodes

F	129	Acquaintance of 108	Prepared by 128 & 108 Cocaine	Administered by 128 on both administration episodes. Aborted administration attempt by108 on 2nd administration episode.

INJECTING EVENT 42 (N=1) - 17/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	117	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 43 (N=1) - 23/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	117	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 44 (N=1) - 24/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	130	Friends*	Prepared own Cocaine	Administered by 112 *N.B: 130 needs 112 to inject him in the neck

INJECTING EVENT 45 (N=1) - 24/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	120	Injecting alone	Prepared own Heroin	Self-administered

INJECTING EVENT 46 (N=2) - 25/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	122	Friends	Prepared for self & 131 Heroin	Self-administered
M	131	Friends	Prepared by 122	Self-administered

INJECTING EVENT 47 (N=2) – 29/04/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
F	129	Friends	Prepared for self & 132 Heroin	Administered by 132
M	132	Friends	Prepared by 129 Heroin	Self-administered and administered 129

INJECTING EVENT 48 (N=1) - 01/05/03				
Sex	**Study Number**	**Relationship between injectors present**	**Preparation**	**Administration**
M	130	Friends*	Prepared own Cocaine	Administered by 112 *N.B: 130 needs 112 to inject him in the neck

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