

**Educational interventions to
prevent Hepatitis C: A review of
the literature and expert opinion**

May 2009

Dawn Griesbach, Griesbach & Associates

Avril Taylor, University of the West of Scotland

Contents

Acknowledgements	iii
Abbreviations	iv
Summary	v
1 Introduction	1
1.1 Aims of the review	1
1.2 What is an “educational intervention”?	2
1.3 Structure of this report	3
2 Methods	4
2.1 Consultation with experts	4
2.2 Review of the literature	4
3 What is known about the effectiveness of educational interventions?	6
3.1 Palmateer <i>et al</i> (2008) review	6
3.2 Aggleton <i>et al</i> (2005) review	6
3.2.1 <i>Mass reach interventions</i>	7
3.2.2 <i>Outreach interventions</i>	7
3.2.3 <i>IEC in harm reduction, drug treatment and cessation programmes</i>	8
3.2.4 <i>HIV testing and counselling</i>	8
3.2.5 <i>Risk reduction counselling</i>	8
3.2.6 <i>Network interventions</i>	8
3.2.7 <i>Conclusions</i>	8
4 Peer interventions	9
4.1 Community outreach (peer intervention – 1)	10
4.2 Peer intervention – 2	14
4.3 Peer intervention – 3	17
4.4 Peer intervention – 4	19
4.5 Peer intervention – 5	23
4.6 Peer intervention – 6	26
5 Non-peer-led interventions	28
5.1 Brief behavioural intervention	29
5.2 Media campaign to prevent injecting	31
5.3 Intervention to prevent initiation into injecting – 1	33
5.4 Prison-based intervention	35
5.5 Computer-aided HIV / AIDS educational intervention	37
5.6 Counselling intervention	39
5.7 Intervention to prevent initiation into injecting – 2	41

6	Unevaluated educational resources	43
6.1	Exchange Supplies website (www.exchangesupplies.org)	43
6.2	Harm Reduction Works (www.harmreductionworks.org.uk).....	43
6.3	Lifeline Publications (www.lifelinepublications.org/)	44
6.4	Australian Injecting and Illicit Drug Users' League (AIVL) (www.aivl.org.au/)...	45
7	Improving the effectiveness of educational interventions.....	46
7.1	Challenges / difficulties in delivering educational interventions	46
	7.1.1 <i>The diversity of the injecting population</i>	46
	7.1.2 <i>Information arrives too late</i>	46
	7.1.3 <i>Incorrect assumptions made about IDUs' knowledge</i>	46
	7.1.4 <i>Literacy difficulties</i>	47
	7.1.5 <i>Information about risk alone is insufficient to deter injecting</i>	47
	7.1.6 <i>Routine nature of injecting</i>	47
8	Discussion and recommendations.....	49
8.1	Comment on the quality evidence	49
8.2	Effectiveness of the interventions	49
8.3	Intervention design / mode of delivery	50
8.4	Factors that contribute to the effectiveness of educational interventions	51
8.5	Transferring the interventions to a Scottish context	52
8.6	Recommendations	53
9	References.....	55
9.1	Reviews of educational interventions to prevent HIV / HCV transmission.....	55
9.2	Published primary studies describing relevant interventions.....	55
9.3	General references.....	56
	Appendix 1: Completed review templates.....	60
	Appendix 2: Relevant articles / reports not included in the review	70

Acknowledgements

We would like to thank the following people for their helpful contributions toward this review.

Caryl Beynon, Centre for Public Health, Liverpool John Moores University

Robert S. Broadhead, Department of Sociology, University of Connecticut

James Egan, Scottish Drugs Forum

Michael Linnell, Lifeline Publications

Hugo Luck, National Treatment Agency

Lisa Maher, National Centre in HIV Epidemiology and Clinical Research, University of New South Wales

Graham McIntosh, Scottish Drugs Forum

Norah Palmateer, Health Protection Scotland

Andrew Preston, Exchange Supplies

Steffanie A. Strathdee, University of California at San Diego School of Medicine

Carla Treloar, National Centre in HIV Social Research, University of New South Wales

We are also grateful to Josephine Haigh, George Howie and Sarah McCulloch at NHS Health Scotland for their helpful input to the study at various stages.

Abbreviations

BBV: blood-borne virus

HBV: hepatitis B virus

HCV: hepatitis C virus

HIV: human immunodeficiency virus

IDU: injecting drug user

IEC: information, education and communication / counselling

Summary

This report presents the findings of a review of literature on educational interventions which may be effective in preventing the transmission of the Hepatitis C virus (HCV) among injecting drug users or those who are at risk of injecting. This review was commissioned by NHS Health Scotland as part of Phase 2 of Scotland's Hepatitis C Action Plan, which aims to reduce the transmission of the Hepatitis C virus (HCV).

The aims of this study were:

1. to identify effective educational interventions, either in the areas of drug or BBV education which have been shown, or have the potential, to be applied to the prevention of Hepatitis C transmission
2. to define educational interventions which would be appropriate for NHS Boards to implement with the target audiences of: vulnerable individuals, injecting drug users and those at risk of starting to inject
3. to identify themes from the literature review and review of expert opinion which can be used to inform the development of guidance for local NHS Boards.

The review focused on interventions that were targeted at current injectors and people at risk of starting to inject (including those who have recently stopped injecting). Educational interventions were defined as those which had the aims of raising awareness, enhancing or improving knowledge, or changing behaviour. All aspects of the interventions were of interest, namely:

- the method of reaching or recruiting the target population
- the mode of delivery (e.g., audio-visual materials, one-to-one sessions, peer outreach, etc.)
- the message or educational content
- the outcome or impact.

This study sought to identify effective interventions from both the published and "grey" literature. Therefore, there were two parts to the review. The first involved a consultation with a selection of experts in the field. The primary purpose of this consultation was to identify the "grey" literature. The second part of the review involved a search of bibliographic databases to identify the relevant published literature.

The focus throughout the study was on *evaluated* interventions. Only those reports that described the intervention in detail, and (with one exception) provided information about outcomes, were included.

Thirteen interventions were identified. These included six peer interventions and seven non-peer-related interventions. Each of these interventions is described in this report. Details are given about the aim and nature of the intervention, its target group, the setting in which it is to be delivered and its evaluated outcomes.

In addition, this review identified a variety of educational resources / materials which have been used for HIV / HCV prevention among injecting drug users. Information about these resources mainly came from the experts who were interviewed as part of this study. The majority of these resources have not been formally evaluated, although many of them have been developed on the basis of research and input / feedback from IDUs.

This review identified that certain factors help contribute to the effectiveness of educational interventions. In short, good educational interventions:

- require minimal literacy
- are interactive (allow for discussion, sharing of experience)
- are supported with audio-visual resources
- use appropriate language
- are relevant and tailored specifically and carefully to the target group
- allow people to learn at their own pace
- give people opportunities to practice new behaviours
- are delivered by people with credibility
- are delivered regularly and consistently.

Recommendations are made about how some of the educational interventions described in this report may be implemented in a Scottish context.

1 Introduction

This report presents the findings of a review of interventions in the areas of drug or blood-borne virus (BBV) education which have been shown, or have the potential, to be effective in preventing transmission of Hepatitis C.

This review was commissioned by NHS Health Scotland as part of Phase 2 of Scotland's Hepatitis C Action Plan (Scottish Government, 2008). One of the main aims of the Action Plan is to reduce the transmission of Hepatitis C virus (HCV), thereby reducing the number of new HCV infections every year. In Scotland, Hepatitis C transmission is primarily associated with injecting drug use. Therefore, the focus of this review has been on educational interventions that are effective among injecting drug users and those who are at risk of starting to inject.

Improved educational interventions among these groups are important for several reasons. First, there is evidence to show that the distribution of sterile needles and syringes alone is not enough to reduce HCV prevalence among injecting drug users (Jones *et al*, 2008). And second, although there has been a decline in Scotland in recent years in the sharing of needles and syringes among injecting drug users (ISD, 2006; ISD, 2008), the re-use of needles, and sharing of other (non-needle) injecting paraphernalia, such as filters, cookers and water, continues to be common (HPS & University of West of Scotland, 2008; Taylor *et al*, 2004). These practices, like the sharing of needles and syringes, have been implicated in the transmission of HCV (De *et al*, 2008), and some studies have shown that injectors do not always understand how the sharing of paraphernalia can result in the spread of the virus (Latka *et al*, 2008; Scott, 2008).

1.1 Aims of the review

The aims of this study, as set out by NHS Health Scotland were:

- to identify effective educational interventions, either in the areas of drug or BBV education which have been shown, or have the potential, to be applied to the prevention of Hepatitis C transmission
- to define educational interventions which would be appropriate for NHS Boards to implement with the target audiences of: vulnerable individuals, injecting drug users and those at risk of starting to inject
- to identify themes from the literature review and review of expert opinion which can be used to inform the development of guidance for local NHS Boards.

As the greatest risk factor associated with Hepatitis C transmission in Scotland is injecting drug use, for the purposes of this review, the term “vulnerable individuals” refers to current injectors and those who are at risk of starting to inject (and those who have recently stopped injecting). The latter group would include:

- former injectors, in particular, those who are in treatment for drug misuse
- those involved in the criminal justice system, including prisoners

- homeless people
- non-injecting drug users (i.e., those who are dependent on illicit drugs, or who use illicit drugs recreationally).

This review did not include interventions which aimed to promote safer sex practices as a means to prevent HIV, as HCV is not ordinarily spread through sexual contact.

It is important to emphasise that the primary focus of this review has been on *evaluated* educational interventions. This report also includes information in a separate section about educational interventions or educational resources which were identified by experts as potentially effective in preventing HIV / HCV, but which have not been formally evaluated. In most cases, these interventions have been developed on the basis of previous research. However, it is possible for an intervention to be developed upon the basis of good research, but not be effective because, for whatever reason, it fails to reach or communicate with the target audience.

1.2 What is an “educational intervention”?

In a review of educational interventions to prevent HIV / HCV transmission, it will be necessary to first define what an educational intervention is. In general, educational interventions involve the communication of information to a specific target group for one or more of the following purposes:

- to raise awareness
- to enhance or improve knowledge
- to change behaviour.

This review found that educational interventions which aim to change behaviour are often referred to in the literature as “behavioural interventions” rather than “educational interventions”. In general, the ultimate aim of these types of interventions is to bring about a cessation of injecting, or to prevent the initiation of injecting in those who have not yet begun.

However, as will be seen later in this report, some educational interventions recognise that this outcome may not be achievable in everyone immediately. Therefore, many have a number of secondary objectives, which may include:

- to reduce the frequency of injecting
- to reduce sharing of needles / syringes and other injecting paraphernalia
- to reduce re-using of needles / syringes and other injecting paraphernalia
- to promote one-person use of needles / syringes and other injecting paraphernalia

In defining what is meant by “educational interventions”, it is also worth clarifying what is meant in this report by “an intervention”. An intervention in its broadest sense is an action or collection of actions which aim to achieve a desired effect. In terms of educational interventions, the activity may be as simple as giving out a leaflet or pamphlet, or it may be as complex as developing a peer outreach programme for injectors to deliver educational messages to other injectors in their community or social network.

What is clear from the literature is that there are several aspects to an educational intervention.

The first is that the intervention needs to have a *method of reaching, or recruiting, its target population*. Secondly, the intervention must have a *mode of delivery*. For example, some educational interventions are delivered through audio-visual material, others are delivered by professionals in one-to-one or group sessions, others are delivered by injecting drug users to their peers. The third aspect of an educational intervention is the *content* of the education, or the *message or messages*. And the final aspect of an educational intervention is its *outcome* or, in the longer term, its *impact*.

1.3 Structure of this report

This report contains eight chapters.

- **Chapter 2** describes the methods used to identify the relevant literature
- **Chapter 3** provides a summary of review-level evidence on the effectiveness of educational interventions aimed at preventing the transmission of BBVs among injecting drug users
- **Chapter 4** describes five peer educational interventions
- **Chapter 5** describes six non-peer-related interventions, five of which are intended to be delivered by professionals in a drug treatment or harm reduction service context (this includes one computer-based intervention) and one mass media intervention
- **Chapter 6** describes two other interventions which were identified in the literature, one peer intervention and one intervention which aims to prevent initiation into injecting. These are included separately because they were either in development, or the evaluation of the intervention did not report on the outcomes of implementing the intervention.
- **Chapter 7** provides a brief summary of some of the challenges associated with educating IDUs who are at risk of acquiring HCV and other BBVs, as well as some factors that help contribute to the effectiveness of educational interventions among this group.
- **Chapter 8** briefly discusses the findings of this review and highlights some of the implications for services in Scotland.

In addition, the report contains two appendices:

- **Appendix 1** provides details of the evaluations of the interventions described in Chapters 4-6.
- **Appendix 2** provides summary information about the articles, reports and papers that were considered for inclusion in this review, but which were then rejected.

2 Methods

This review sought to identify effective interventions from both the published and “grey” literature. Therefore, there were two parts to the review. The first involved a consultation with a selection of experts in the field of HCV prevention / education. The primary purpose of this consultation was to identify the “grey” literature. The second part of the review involved a search of bibliographic databases to identify the relevant published literature.

2.1 Consultation with experts

A short list of experts in the field was agreed with Health Scotland, and these individuals were contacted. Experts were asked whether they were aware of unpublished literature on educational interventions which may be relevant to HIV or HCV prevention, or drug misuse prevention more widely.

The consultation with experts primarily took place via email and telephone. Few of the experts identified relevant “grey literature”. However, several highlighted interventions that were in the process of being developed, or educational resources (leaflets, posters, DVDs, booklets, etc.) which had been created on the basis of research findings, but where the resource itself had not been evaluated.

2.2 Review of the literature

In addition to the consultation with experts, this study also involved a review of the English-language literature from 2000 onwards to identify published evaluations of relevant educational interventions. (Where articles referred to reports of other studies published prior to 2000, these earlier reports were also obtained. However, because of the timescales available for the study, and a desire to focus on the most recent, up-to-date information, a thorough review of the literature prior to 2000 was not undertaken.)

A search was undertaken of the Medline and PsycINFO bibliographic databases. Search terms included:

- HIV, AIDS
- Hepatitis C
- intervention
- educat* (the use of the wildcard character * would allow the identification of abstracts containing, “educate”, “education” and “educational”)
- prevent* (to identify “prevent” and “prevention”)

Following the identification of an initial set of reports, the search terms were expanded to include “behavioural intervention” and “behavioral intervention”. The results were that:

- 35 papers / reports / articles initially identified

- 22 discarded as not relevant because they did not describe the educational intervention in detail or because they did not describe the outcomes of an intervention
- 11 papers contained information which described an educational intervention in some detail and the outcomes of that intervention.
- 2 papers which described an educational intervention in some detail, but which (for various reasons) did not report outcomes from an evaluation of the intervention.

Each report was read, and a template was completed to identify the salient points. Each template included information about:

- the study
 - author(s) of reports
 - source of information
 - study design / methods
- the intervention
 - nature of intervention and nature of the control intervention (if applicable)
 - who it was delivered by
 - target group
 - setting
 - sample size for the intervention
 - good practice (where identified)
 - limitations (where identified)
 - outcomes
 - conclusions / lessons learned

The templates for the reports and articles that described educational interventions are provided in Appendix 1.

Some of the reports that were discarded may have contained information which was nevertheless useful for the purposes of developing or implementing an educational intervention. Relevant information from these reports has been summarised briefly in Chapter 7 and they are listed in Appendix 2.

3 What is known about the effectiveness of educational interventions?

Before describing the individual interventions that were identified in this review, it will be useful to summarise what is known about the effectiveness of educational interventions in general, based on reviews carried out by Palmateer *et al* (2008) and Aggleton *et al* (2005).

The term, “educational interventions” as used in this report is a short-hand for the more specific term, “information, education and communication (or IEC) interventions.” As discussed in Chapter 1, these interventions aim to raise awareness, enhance knowledge or change behaviour. Educational interventions are often an important component in harm reduction programmes which generally include other types of interventions such as needle / syringe exchange, condom distribution, opiate substitute prescribing, etc.

3.1 Palmateer *et al* (2008) review

Palmateer *et al* (2008) carried out a review of reviews (a review of review-level evidence) to assess the effectiveness of harm reduction interventions in preventing the transmission of HCV among injecting drug users. This study involved examining review-level evidence on a range of interventions, including information, education and counselling (IEC) interventions. (Note in Palmateer *et al* (2008), IEC interventions are defined as “information, education and counselling,” rather than “information, education and communication”, as is more usual in the literature.)

The study concluded that there was tentative review-level evidence to support the effectiveness of IEC interventions in reducing injecting risk behaviour. However, with respect to *preventing* injecting risk behaviour among young IDUs, there was insufficient review-level evidence to assess the impact of IEC. Moreover, there was little or no review-level evidence to either support or discount the cost-effectiveness of IEC in relation to HCV or HIV prevention.

3.2 Aggleton *et al* (2005) review

A review carried out by Aggleton, Jenkins & Malcolm (2005) specifically examined the role of information, education and communication (IEC) in HIV / AIDS prevention and harm reduction among injecting drug users and their sexual partners. The review identified the following individual-level IEC interventions (those which are targeted at individual IDUs):

- mass reach interventions
- outreach work
- harm reduction, drug treatment and cessation programmes
- access to HIV testing and counselling
- risk reduction counselling.

Aggleton *et al*'s findings on the effectiveness of each of these types of intervention are described in more detail below.

3.2.1 *Mass reach interventions*

Mass reach interventions include mass media campaigns, and interventions involving the use of audio-visual materials.

Evidence suggests that mass reach interventions are seldom effective in reducing drug use or bringing about reductions in risk behaviour. However, they can be effective in raising awareness and changing knowledge.

The evidence is contradictory about whether the use of fear messages is effective in the drug prevention field. Some studies suggest that fear messages can have beneficial effects; others suggest that they can be counter-productive. Some fear-based media campaigns — the example was given of the UK Department of Health campaign, “Heroin Screws You Up” — have been shown to inadvertently reinforce negative attitudes and beliefs.

The literature suggests that the overuse of shock tactics and simplistic messages are unlikely to be effective.

According to Aggleton *et al* (2005), effective mass media campaigns put the emphasis on the positive benefits of changing behaviour, stressing short-term benefits, rather than longer-term outcomes. Language, vocabulary and mode of address are all important. It is particularly important to target different population groups with different messages, and there is evidence that a lack of audience segmentation is one of the main reasons for failure of health promotion initiatives involving the media.

In relation to mode of delivery, audio-visual media have been found to be successful in promoting harm reduction and prevention messages. There are also examples of other modes of delivery, including leaflets, ‘buttons’, calling cards and information packs being widely used to educate injectors about risk reduction, but few of these interventions have been evaluated.

3.2.2 *Outreach interventions*

Outreach interventions are used to take health education messages into the community. At the same time, they generally also provide the means to help people reduce their risk (eg, through distribution of condoms, sterile needles / syringes, etc).

Some outreach interventions have used professional outreach workers; others have employed current or former IDUs as outreach workers. Peer interventions involve current or former drug users in providing information, generating peer support and using the culture of the target group to bring about and sustain behaviour change.

Outreach services seem to be particularly effective in reaching IDUs who are not in contact with services and in bringing about a reduction in injection-related risk behaviours.

Evaluations strongly suggest that, with guidance and nominal incentives, IDUs can reach a larger and more diverse population of IDUs than professional workers, and that they can do so at lower cost.

3.2.3 IEC in harm reduction, drug treatment and cessation programmes

Information, advice and education are important aspects of most harm reduction and drug treatment programmes. However, Aggleton *et al* (ibid) found very little evaluation of the IEC component of such programmes. On the other hand, there is some evidence to show that IEC can be used effectively to inform injectors about the existence of such programmes.

3.2.4 HIV testing and counselling

The process of testing an individual for HIV generally involves a one-to-one discussion between a health professional and the person being tested. There is ordinarily a pre-test discussion, and a post-test discussion which takes place after the test results are available. This form of intervention is referred to in the literature as “voluntary counselling and testing (or VCT)”. The “counselling” aspect of the intervention mainly involves the delivery of educational messages, but also motivational work aimed at encouraging IDUs to reduce their risk behaviour.

A review of 19 studies involving voluntary counselling and testing found that there were substantial reductions in both injecting-related and sexual risk behaviours among IDUs who had received HIV testing and counselling.

There is also some research to show that IDUs’ knowledge of their HIV status can lead to short-term risk reduction, although the evidence for longer-term change is less conclusive.

3.2.5 Risk reduction counselling

Counselling approaches that encourage active decision-making among IDUs have been shown to be effective in producing sustained behaviour change. Such counselling often includes the provision of information or education, but the IEC component of these interventions have not been evaluated. (Note that, in Chapter 4, one of the interventions described is a form of risk reduction counselling.)

3.2.6 Network interventions

The review by Aggleton *et al* also identified IEC interventions that may be targeted at groups of IDUs. These involve the use of network intervention techniques (including group sessions). Studies have shown that IDUs involved in network interventions modify their risk behaviour to a greater extent than IDUs who receive an individual-focused intervention.

3.2.7 Conclusions

The authors of this review conclude that, by themselves, information, education and communication interventions can do little more than raise levels of knowledge, awareness and understanding. On the other hand, when combined with other measures, including service provision and a supportive social environment, better and more sustained outcomes can be achieved.

4 Peer interventions

This section will describe six peer interventions, which have been implemented in various parts of the world. This information has been gathered from published evaluations, several of which used randomised control trial or quasi-experimental designs.

Peer interventions are referred to in the literature in a variety of ways (e.g., peer-led intervention, peer-driven intervention, peer mentoring, peer outreach). The distinction between these different terms is not always apparent, and the same terms may be used by different authors to refer to slightly different models.

Whatever the precise term used to refer to it, a peer intervention describes the *mode* by which an educational intervention is delivered. As will be seen below, in some cases, the peers deliver the actual educational content, and in other cases, the peers are responsible for reaching or recruiting the target population, and perhaps delivering certain information, but the main educational messages are delivered by professionals.

In addition to these following interventions, a website run by the Australian Injecting and Illicit Drug-Users League (AIVL) contains a report which sets out a framework for conducting peer education within agencies that provide support to drug users.¹ As this report provides a framework, rather than a detailed presentation of a specific intervention, it has not been reviewed for this report. However, the principles contained in it may be useful to agencies in Scotland which are considering developing peer interventions.

¹ Australian Injecting and Illicit Drug Users League (AIVL) (2006) A framework for peer education by drug-user organisations. Available at: www.aivl.org.au/files/FrameworkforPeerEducation.pdf.

4.1 Community outreach (peer intervention – 1)

Overview

A report issued by the US National Institute on Drug Abuse (NIDA) in 2000 describes a model of carrying out community-based outreach to prevent HIV among injecting drug users. This model was developed on the basis of 30 research studies sponsored by NIDA over a period of 15 years. A review of this research was undertaken by Needle *et al* (2005). According to the NIDA website, the model has been implemented and tested in 52 communities with more than 60,000 IDUs. It has also been adapted and tested with nearly 14,000 crack cocaine users.

The result is a detailed manual² on how to set up and run a successful outreach programme. The NIDA outreach model, also referred to in the literature as the Indigenous Leader model, includes a substantial educational component, which is organised around HIV, hepatitis B (HBV) and HCV testing.

The model relies on outreach workers who typically live in the local community, are familiar with the drug use subculture, and are trusted as a source of information. In many (although not all) cases, the outreach worker is a former drug user, and for this reason, this model is grouped in this chapter with other peer interventions.

Intervention aim

To access and engage drug users and their sex partners in the process of behaviour change to prevent the transmission of HIV and other blood-borne virus infections.

Target group

Drug-using populations not in drug treatment.

Setting

The model can be used in a range of local settings. According to the manual, it is not necessary for effective outreach to have access to a “field station” or dedicated space (i.e., office premises). However, it is suggested that the field station can usefully provide a base for outreach workers and a venue for conducting educational sessions and BBV testing and counselling. It can also be used to deliver additional social and medical services, and provide a space for support group meetings. A community field station might take a number of forms, including:

- storefronts
- mobile BBV testing units
- offices in health centre (or local health board) facilities
- leased office spaces
- facilities provided by universities or colleges
- offices in buildings where other community medical and social services are delivered

² Available at: <http://www.drugabuse.gov/CBOM/Index.html>

Description of the intervention

As mentioned above, the NIDA community outreach model includes a substantial educational component. Educational messages are delivered by the outreach workers in the first instance, and these messages are reinforced through two educational sessions delivered by a health educator in connection with BBV testing.

Outreach workers aim to undertake four activities in the course of an initial contact with an injector, and to communicate a set of core messages to each new contact:

- **Discuss risk behaviours:** After establishing rapport with an individual, the outreach worker initiates a discussion of both drug-related and sex-related risk behaviours. By reviewing the behaviours that put people at risk for BBV virus transmission, and discussing personal risks, they can determine which risk-reduction messages may be most appropriate for a particular individual. In addition, misconceptions about risk can be addressed.
- **Explain ways to reduce risk:** Outreach workers communicate a hierarchy of safer behaviours. It is explained to IDUs that the best thing that they can do to prevent the transmission of BBVs, is to stop using and injecting drugs. As most IDUs have difficulty stopping drug use on their own, they are encouraged to enter treatment. However, if IDUs cannot or will not enter treatment, they should take the following precautions:
 - do not reuse or share syringes, needles or other injecting paraphernalia
 - use only syringes obtained from a reliable source
 - use a new, sterile syringe each time to prepare and inject drugs
 - if possible, use sterile water to prepare drugs; otherwise use clean water from a reliable source (tap water)
 - clean the injection site with a new alcohol swab prior to injecting
 - safely dispose of syringes after one use.

Outreach workers also provide details of the locations of needle exchange facilities in the local community.

- **Provide written information and other materials to support risk reduction:** In addition to discussing risk-reduction methods with individuals, outreach workers also provide literature and other materials (bleach kits, condoms, etc.) to support risk reduction. Printed materials help to reinforce and reiterate verbal messages, and they can also provide a greater level of detail. Printed materials may include instructions for cleaning needles, syringes, and drug equipment; instructions for using latex condoms; information about where and how to access local service providers (including needle exchange; drug treatment; HIV, HBV, and HCV testing and pre- and post-test counselling services; and other health and social care services). Pictorial information may help to communicate risk reduction messages to those who are unable to read.
- **Offer referrals:** Finally, outreach workers may make formal referrals to other services, as appropriate. Wherever possible, individuals are given the name of a specific agency and resource person for the information and

support they need. The outreach worker also provides information to facilitate access to other services, for example, hours of operation, eligibility requirements and a general endorsement of the agency and the services offered. By describing positive relationships with, and personal approval of, staff members of local service agencies, the outreach worker can help individuals feel more at ease in seeking care.

According to the NIDA manual, all of these activities can usually be conducted within a single 5- to 20-minute conversation, although this depends to some extent on the setting in which the conversation takes place. In addition, outreach workers are encouraged to engage at-risk IDUs in multiple conversations over a period of time, as repeated contacts allow more in-depth discussion of prevention messages.

Once the outreach worker has successfully communicated all the “core” material (described above), they may then encourage individuals to participate in two educational sessions which are conducted in connection with BBV testing and pre- and post-test counselling. Each of these additional sessions takes 20-30 minutes, and a set of 24 cue cards (provided in the manual) is used to guide the sessions. Because of the personal nature of the content, and its format, the NIDA manual suggests that it is best to conduct these sessions in a controlled, office environment.

The topics covered in Session 1 are:

- basic information about HIV, HBV, and HCV
- injection-related risks and prevention strategies
- sex-related risks and prevention strategies
- benefits of drug treatment and cessation of drug use
- information about HIV antibody testing
- distribution of literature and other materials to support risk reduction, including referrals
- voluntary testing and pre- and post-test counselling for HIV, HBV, and HCV (on site or by referral).

Topics covered in Session 2 are:

- provision of test results, if applicable
- meaning of test results
- review of prevention messages discussed in Session 1
- discussion of medical follow-up and early treatment (for seropositive individuals)
- partner notification (for seropositive persons to inform their drug and sex partners about potential risk of infection)
- distribution of literature and other materials to support risk reduction, including referrals.

Session 2 is generally held within six weeks after the scheduled HIV, HBV, or HCV test. The session may take more than 20-30 minutes, depending on test results. Some seropositive individuals may require up to 60 minutes.

The outreach manual is very detailed, and provides:

- research-based principles of HIV prevention for drug-using populations not in drug treatment
- background information on community-based HIV prevention, including how it works, why it works, where it works and for whom it works
- a discussion of the roles and personal characteristics of effective community-based outreach workers
- step-by-step instructions for conducting community-based outreach and risk-reduction counselling sessions for out-of-treatment drug users and their sex partners
- information for managers on how to establish a community-based outreach HIV/AIDS risk-reduction prevention programme locally, establish a field station and provide training and supervision to staff.
- cue cards to be used or adapted during educational sessions.

Outcomes

Findings from more than 40 studies reported that community-based outreach is an effective strategy for reaching IDUs and providing them with the means for behaviour change (Needle *et al*, 2005). Of those IDUs who have participated in community outreach interventions, a significant proportion:

- entered drug treatment
- stopped or reduced their frequency of injecting, reuse of needles and syringes, reuse of cookers, filters and water, and use of crack cocaine
- increased condom use or had unprotected sex less frequently
- obtained HIV testing and pre- and post-test counselling
- averted HIV infection.

4.2 Peer intervention – 2

Overview

Latka *et al* (2008) and Garfein *et al* (2007) describe the same peer education intervention (also referred to as a peer mentoring intervention), which was delivered to two different groups of injecting drug users. The first group were HCV-positive (Latka *et al*) and the second group were HCV-negative (Garfein *et al*). The intervention combined cognitive-behavioural theory with a peer education model. The intervention was evaluated in a large multi-site randomised controlled trial.

Intervention aim

The aim was to train IDUs to educate their close peers about HIV and HCV risk reduction, while at the same time encouraging the peer educators to change their own behaviours in order that they could act as role models. The intervention sought to reduce the lending of used syringes; the reusing of syringes; and the sharing of other drug preparation equipment (cookers, filters and water).

Target group

HCV-positive and HCV-negative injecting drug users, aged 18-35 years.

Setting

The intervention described in Latka *et al* (among HCV-positive drug users) was carried out in three US cities: Baltimore, New York City and Seattle. The intervention described in Garfein *et al* (among HCV-negative drug users) was carried out in five cities: Baltimore, Chicago, Los Angeles, New York City and Seattle. A variety of premises were used to deliver the intervention.

Description of the intervention

HIV and HCV pre-test counselling was provided at baseline for both groups. Test results and face-to-face post-test counselling were given approximately two weeks later, before the start of the intervention. HCV-positive IDUs in the Latka *et al* study were also referred for HCV-related medical care.

Each intervention consisted of six sessions, two hours in length, held twice weekly. All sessions were led by the same two facilitators, who followed scripted manuals.³ The intervention was delivered through activities that required minimal literacy.

- **Session 1** described HIV and HCV transmission through sex and injecting drug use, informed participants about disease prevalence in their communities and described the vital role that peer educators play in preventing further disease spread.
- **Sessions 2 and 3** provided information about safer injecting and sexual practices, respectively, with activities designed to increase negotiation skills with sex and injection partners.

³ The 123-page manual is available at: <http://duit.ucsd.edu/DUIT%20PEI%2003Dec01.pdf>.

- **Session 4** included skills-building activities and prepared participants to demonstrate peer education in particular public settings (e.g., an information table on the street or near a syringe exchange programme).
- In **Session 5**, small teams of up to five participants conducted 90-minute peer education sessions. Participants debriefed afterwards with the facilitator, who reinforced positive experiences and minimised potentially negative reactions.
- **Session 6** consisted of a large group debriefing, goal-setting to encourage continued risk reduction, and a graduate ceremony.

To illustrate how blood-borne viruses can be transmitted through the sharing of drug preparation equipment, a video was developed depicting a typical drug preparation scenario. In the video, fake drugs and paraphernalia were “contaminated” with a dye (representing HCV) visible only under ultraviolet lighting. The injection scene was first shown with natural light, and then repeated under ultraviolet lighting, which showed how all injection equipment can become contaminated (and transmit viruses) even when a used syringe is not lent to another individual.⁴ Videos provided by the Hepatitis Foundation International were also used.⁵

A harm reduction approach was used to promote risk reduction options among IDUs who might continue to inject drugs. At the same time, it was emphasised that the best option was to cease drug use. Options were presented hierarchically, and it was explained that transmission risks decreased lower down a “risk ladder” that promoted the following behaviours:

1. not lending a used syringe (bleached or unbleached) for injecting
2. not preparing drugs with a previously-used syringe or paraphernalia
3. not lending used paraphernalia
4. refraining from illicit drug use (injection or otherwise).

Participants were also taught the mnemonic, PALMS, for conducting peer mentoring:

- **P**ick an appropriate time and place
- **A**sk open-ended questions
- **L**end from your experience
- **M**ake appropriate suggestions for where they are at
- **S**hare information, don’t preach.

Outcomes

Outcomes were measured at three and six months after the intervention using computer-assisted self-interviews. A randomised control trial evaluation found that there were reductions in risk behaviour among both the intervention groups and the control groups.

⁴ This video may be viewed at: <http://duit.ucsd.edu/materials.html>.

⁵ See *The silent stalker*, www.hepfi.org/education/videos_1.htm.

Latka *et al* (intervention among HCV-positive drug users) found that the intervention group was less likely than a control group to report lending and sharing of needles and other injecting paraphernalia at three months and six months follow-up. However, the intervention group were no more likely than the control group to cite their HCV-positive status as their reason for not lending syringes. Effects of the intervention were strongest among individuals who had known their HCV-positive status for at least six months. Those who participated in the intervention were significantly more likely than the control group to report engaging in peer mentoring activities (e.g., talking to their peers about HIV / HCV risk reduction). Three months after the intervention, the intervention group also reported significantly higher self-efficacy than the control group, although these results were not sustained at six months. Self-efficacy refers to the individual's sense that they have the power to avoid sharing of syringes and other injecting equipment.

Garfein *et al* (intervention among HCV-negative drug users) found that the intervention led to a 29% greater decline in overall injection risk six months later compared to the control group, and a 76% decrease compared to baseline. There were not statistically-significant differences between the groups in individually measured injecting risk behaviours at three and six months follow-up. However, there was a significant difference between groups for a composite measure of injecting risk. There were no differences between the two groups in HCV incidence rates. The overall incidence of HCV infection was 18.1/100 person-years across both groups. None of the individuals in either the intervention or control group seroconverted to HIV-positive during the follow-up period.

Other points

Garfein *et al* make the point that both the intervention and control groups received identical HIV / HCV pre- and post-test counselling, and a range of HIV and HCV educational pamphlets, medical and drug treatment referrals, etc. It was suggested that the control condition may have been overly powerful, which would have the effect of minimising the relative efficacy of the intervention. In addition, it is possible that the intervention participants practised what they had learned on their peers in the control group. This would also have had the effect of minimising the relative efficacy of the intervention. Furthermore, the authors of both papers also suggest that there may have been insufficient statistical power to detect differences.

Intervention participants were surprised to learn, through the video, how unsafe drug preparation practices could spread viruses to sterile equipment in the absence of lending used syringes. In addition, participants often did not understand the significance of a HCV-positive test result. The authors suggest it may take time for awareness of one's HCV status to be internalised and translated into behaviour change.

Purcell *et al* (2007) describes the process by which the intervention was developed. See also www.cdc.gov/hiv/topics/research/prs/resources/factsheets/STRIVE.htm for further information about the intervention and its resources.

4.3 Peer intervention – 3

Overview

Latkin *et al* (2004) describe a peer education intervention carried out under the auspices of the SHIELD study (Self-Help In Eliminating Life-threatening Disease).

This study evaluated 156 peer outreach educators six months after their training. The purpose of the evaluation was to examine factors associated with talking to other drug users in their networks about HIV-related topics and distributing materials (i.e., condoms, bleach) to reduce risk. The study did not investigate whether the activities of the peer educators resulted in behaviour change among their peers.

Intervention aim

To train individuals living within a drug-using community to promote HIV prevention among their network members and contacts.

Target group

Drug users living in the same community as the peer educators, who are vulnerable to HIV infection. However, it was also expected that the peer education activities would lead to a reduction in risk behaviours in the peer educators themselves.

Setting

IDUs educate their peers wherever they have contact with them: homes, injecting venues and other community locations in the city of Baltimore, Maryland.

Description of the intervention

The peer educator training consisted of ten 90-minute sessions delivered over a five-week period. A detailed manual is available.

Participants took part in four sessions of training in cognitive-behavioural risk reduction and communication skills building before they began outreach education. During these sessions, participants were taught concepts of social norms, leadership, effective communication, modelling and conflict resolution. Role playing of real-life problem situations was also undertaken. Prior to outreach, all participants were tested on their knowledge about HIV to ensure they would disseminate accurate and consistent information.

The content of the information disseminated by the peer educators was that people in their community are vulnerable to HIV infection and that sharing needles, incorrect disinfection of injection equipment and not using condoms can lead to HIV infection.

The outreach phase of the project began after the fourth session, with the remaining six sessions focused on practicing peer outreach, overcoming barriers to outreach and enhancing persuasive communication skills. Participants were taught techniques to engage others in HIV prevention discussions. The sessions also provided a forum to discuss participants' outreach experiences and observations.

During the ninth session, facilitators accompanied participants in the community to practice the peer outreach education skills they learned during the intervention.

During the sessions, participants committed to successively greater goals. These were written on cards by the participants at the end of each session. For example, the first goal was to talk to one person about HIV. By the third session, participants were encouraged to set a goal of talking to three people about sexual risk behaviours. By the end of the fourth session, participants were encouraged to conduct peer outreach in the community with acquaintances and strangers. Each participant's goals were tailored to his / her own skills and level of comfort. Some individuals engaged in HIV prevention discussions with family members, while others were able to discuss it with more distant drug-using acquaintances.

All participants were financially compensated for their time in the group sessions (\$12 per session), but they were not paid for their peer outreach activities.

Outcomes

Follow-up of the volunteer educators took place six months after training. The findings showed that volunteer educators were engaging in HIV prevention activities months after being trained. However, there was great variation in the amount and type of activity they engaged in.

Demographic characteristics (such as age and sex), current drug using status and HIV status were all associated with whether or not the peer educator had had HIV prevention conversations with other drug users in the month prior to the evaluation. For example, peer educators who were current drug users were less likely to engage in HIV-related conversations in the previous month, but were more likely to provide bleach to drug users in their social networks. Older participants (41 and over) were more likely than younger participants to report providing condoms to people in their networks. HIV-positive participants were more likely to report talking to sex partners and family members about HIV. Overall, females engaged in slightly more HIV prevention activities than males.

The authors concluded that it is important to take certain characteristics of the peer educator into account (such as age, gender, status) when designing peer outreach programmes.

Other points

More specifically, the authors highlight that one of the potential pitfalls of peer education is to assume that all drug-using groups are homogenous, and that any individual can be trained to be an effective peer educator. Within any group, there may be several smaller sub-groups, or cliques, which have different attitudes and behaviours. The members of one clique may not view the members of another as credible peer educators.

The authors also point out that it is difficult to assess the direct influence of the peer educators, as their IDU peers may have been subjected to numerous sources of HIV prevention information.

4.4 Peer intervention – 4

Overview

Heckathorn *et al* (1999) and Broadhead *et al* (1995) describe a form of peer intervention developed in the United States in the late 1990s. This intervention is based on the view that the transmission of viruses such as HIV results from risk behaviours that involve close and often intimate contact. Therefore, efforts to prevent the spread of HIV must take social networks into account. Network peer interventions work by tapping into IDUs' social networks to facilitate the wide dissemination of HIV prevention information.

The authors refer to the intervention as a “Peer-Driven Intervention” (PDI). The intervention works by providing a modest monetary incentive to IDUs for recruiting their peers to attend a harm reduction education session at a local service, and a further incentive if they pass on to their peers a specific set of educational messages.

This type of intervention is in contrast to what the authors refer to as the “traditional peer outreach model” (the NIDA model, described in Section 4.1) which involves hiring a small number of community members, usually former drug users or people with street credentials, to work as outreach workers to distribute educational materials and information among members of their own community. The peer-driven intervention addresses some of the difficulties that have been identified in employing indigenous outreach workers. (These difficulties are described in some detail in Broadhead *et al* (1995)).

Heckathorn *et al* (1999) is a report of an evaluation comparing the PDI to the traditional peer outreach model.

Intervention aim

To reduce transmission of HIV among injecting drug users.

Target group

Injecting drug users.

Setting

IDUs educate their peers wherever they have contact with them. Further (enhanced) education was delivered by a professional health educator in an agency office. For the evaluation, the PDI site was based in New London, Connecticut (population approx. 26,000), and the control group (traditional outreach intervention) was based in Windham, Connecticut (population approximately 24,000).

Description of the intervention

The PDI operates using a coupon-based incentive system. After being interviewed and educated about HIV prevention by a health educator, each IDU is given three recruitment coupons, which they can pass on to others in their social network. For each peer who is given a coupon by the IDU-recruiter and comes to the program for an interview, the IDU-recruiter receives \$10 per recruit — that is, the recruiter is paid

for eliciting a positive response from a peer. In addition, each IDU-recruiter who succeeds in educating a peer about eight items of information concerning HIV prevention, as measured by a brief knowledge test administered before each interview, can earn up to an additional \$10. In total, each IDU-recruiter who successfully educates in the community and recruits three peers for an interview can earn up to \$60 for his / her efforts. At the same time, each person who is recruited is paid \$20 for agreeing to be interviewed and attend an enhanced prevention education session delivered by the health educator. The recruit is also offered three coupons to recruit other peers and earn additional secondary rewards.

Thus, the PDI provides IDUs with primary and secondary incentives to participate. Each IDU is given a primary incentive of \$20 for agreeing to be interviewed; this is a reward for the person's own positive behavior. Plus each IDU is given secondary incentives of earning up to \$60 for ensuring that several of his / her peers keep an interview appointment and successfully pass a health knowledge test; this is a reward for eliciting positive responses from one's peers.

In addition to the educational aspect of the intervention, each participant is offered free, voluntary HIV-testing and counselling on-site.

As mentioned above, IDU recruiters are trained to pass on eight items of information (the baseline education module), shown below.⁶ Recruiters are given a "crib card" which has a list of eight word-cues representing each item of information, as an aide-memoire. The word-cues are shown in bold.

1. **Bodily Fluids:** The highest concentrations of HIV are found in blood, semen and vaginal secretions (in that order).
2. **Vast Variety:** There is a vast variety of condoms to choose from; one needs to experiment to find a condom that feels good and is right for you.
3. **Four Bad Factors:** There are four factors that cause medical problems for drug injectors: bad hygiene, bad needles, bad drugs and bad injection technique.
4. **The Urge:** If the urge to get high interferes with your ability to prepare a shot safely and calmly, smoke or sniff a small portion in order to calm down.
5. **Outward Circling Motion:** To clean an injection site with an alcohol swab, wipe in an outward circling motion.
6. **Several Steps:** There are several steps to take in cleaning a used syringe with bleach:
 - rinse it several times with cold water
 - fill it three times completely with bleach
 - during one of those times set the syringe aside for at least 30 seconds
 - shake the syringe with bleach in it
 - rinse all the bleach out by flushing at least twice with clean, cold water.

⁶ This information was not provided in the report of this intervention. It was provided directly to this review by Professor Broadhead, one of the authors.

7. **Rule #1:** Never dispose of a syringe or other injection equipment unless you are certain you have a clean, fully functioning replacement.
8. **\$:** [Discussion of rewards for recruiting and passing on knowledge].

Because the meaning of the cue-words is lost to anyone who has not been educated, recruiters cannot simply tell recruits to read the crib card and expect them to do well on the knowledge test when they come to the project office. The educational information must be delivered orally by recruiters to each of their recruits and discussed before recruits can score well on the knowledge test.

Six months after the initial contact, all recruits are eligible for a further interview and additional BBV prevention education from the health educators.

Outcomes

In a trial comparing the PDI to a traditional outreach intervention, the PDI accessed a larger number of people (50% more) than the traditional outreach intervention did. It also reduced their self-reported level of HIV risk behaviour more effectively, and it did so at significantly less cost.

The PDI resulted in a 77% reduction in frequency of injecting compared to a 47% reduction in the traditional outreach group. There were also statistically significant reductions in syringe sharing among the PDI group compared to non-statistically significant reductions among the traditional outreach group. There were significant reductions in sharing cookers among both the PDI group and the traditional outreach group, and dramatic reductions in sharing of rinse water, although this was significant only in the traditional outreach group.

The incentives paid to injectors in the PDI, of \$10 for recruiting a peer and up to \$10 for educating him / her in the community, resulted in an average cost of approximately \$14 per recruit. The cost of recruiting 227 subjects for initial and follow-up interviews in the PDI over fourteen months was about \$3,178. In contrast, the traditional outreach project cost was \$113,400 for fourteen months. This consisted primarily of the outreach worker's salary of \$2,700 per month (including benefits), as well as the cost of the 182 initial and follow-up interviews, which resulted in a cost per interviewee recruited of \$623.

Other points

The authors suggest that the PDI's recruitment mechanism has several advantages over approaches that rely on outreach workers:

1. First, the PDI puts the burden of identifying recruits on those with the best current information: active users
2. Second, the PDI's pay-for-performance design recognises and rewards the most productive recruiters — subjects are rewarded in direct proportion to the success of their recruitment efforts
3. Finally, the PDI is able to accommodate the cultural diversity of different sub-populations of users — with injectors accessing their peers, the

recruitment effort is always done in a culturally appropriate way for each user sub-group.

The authors make the point that only a small monetary reward is necessary in this type of intervention, as the cost to each IDU of recruiting others is small.

To prevent IDUs from participating in the intervention multiple times by using different identities, a method of participant identification was developed using observable indicators of identify (scars, birthmarks, tattoos, eye colour, ethnicity and gender) and five biometric measures (height, forearm lengths and wrist widths). This information is entered into a customised database system, called IRIS (Identification and Reward Information System), which also automatically computes each participant's recruitment and education rewards.

4.5 Peer intervention – 5

Overview

Broadhead *et al* (2006) describe an evaluation of a peer-driven intervention (PDI) in two cities in Russia. The intervention in one city was the same as that described in section 4.4 (the “standard PDI”). In the second city, the intervention was also the same, but the reward system was slightly modified (the “simplified PDI”), so that the rewards for recruiting peers to take part in enhanced prevention services and education (delivered by professionals) were woven into the recruiters’ educational efforts.

In addition, a new component of the PDI model introduced in this Russian evaluation involved peer-recruiters (as well as health educators) in following up previous recruits six months after the initial intervention. Peer-recruiters were also trained in a *second* body of knowledge which they passed on to their previous recruits at six months.

Intervention aim

To prevent HIV transmission.

Target group

Injecting drug users.

Setting

The evaluation took place in the Russian cities of Bragino (pop. 170,000) and Rybinsk (pop. 234,000) in the province of Yaroslavl. The cities are 4-5 hours by train north of Moscow, and are approximately 60 miles from one other. High unemployment has resulted in a growing problem of injecting drug use among younger people in these cities. The two cities are similar demographically, culturally and in terms of size and nature of the drug scenes, and drug-related HIV rates.

IDUs educate their peers wherever they have contact with them. Further education was delivered by a professional health educator in an agency office. BBV testing and counselling was also provided on-site.

Description of the intervention

The intervention works in the same way as described in Section 4.4. However, a different method of payment (described below) was used in the two cities.

In the standard PDI, recruiters were paid a flat rate of 30 rubles (the equivalent of about \$1.00) for each recruit, and a separate reward (up to a maximum of 30 rubles) for each person they educated. In the simplified PDI, recruiters are only paid for their educational efforts.

The differences in payment between the standard and simplified PDI are set out in Table 3.1 below.

Table 3.1: Comparison between payment methods for standard PDI and simplified PDI

	Standard PDI	Simplified PDI
Initial recruits	30 rubles / recruit + 20 additional rubles for each female recruit*	0 rubles / recruit + 20 rubles for each female recruit*
Initial knowledge test	3 rubles / correct answer + 3 ruble-bonus for correct seventh and eighth answers (maximum = 30 rubles)	3 rubles / correct answer + 3 ruble-bonus for correct seventh and eighth answers (maximum = 30 rubles)
Follow-up recruits	60 rubles / recruit + 20 additional rubles for each female recruit*	0 rubles / recruit + 20 rubles for each female recruit*
Follow-up knowledge test	3 rubles / correct answer, 3 ruble bonus for correct seventh and eighth answer (maximum = 30 rubles)	6 rubles / correct answer + 6 ruble-bonus for correct seventh and eighth answer (maximum = 60 rubles)

* To encourage the recruitment of women, recruiters in both groups were given a bonus of 20 rubles for each female recruit.

Steps are taken to ensure that recruiters do not pressure their recruits to participate. For example, recruits are specifically asked if they were pressured to attend, and recruiters are informed they will lose their opportunity to participate in the intervention if any of their recruits indicate that they were pressured to take part, or do well in the knowledge test. Recruiters are not told the names of their recruits who redeemed their coupons, nor are they told how well any individual scored on the knowledge test.

Follow-up takes place six months after the initial contact. The Russian evaluation tested out a new method of follow-up which involved both the peer recruiters and the health educators in the follow-up process.⁷

The health educators contact the initial group of recruiters using information stored in the project database. When this initial group arrive for their follow-up appointment, the intervention process proceeds in the same way as the initial appointment, except that follow-up recruits are educated in a second educational module.

Each participant is then given the opportunity to serve a *second* time as an educator and recruiter. Second-time recruiters are given new coupons and crib cards for both the original baseline education module and the second module. They educate *new* recruits in the baseline education module, and the educate *follow-up* recruits in the new body of information. Individuals presenting to the agency office bearing a

⁷ The authors make the point that the issue of follow-up is generally a neglected component of existing outreach models. Few evaluations have discussed the follow-up process and how to achieve a high return.

coupon are then interviewed as follow-up recruits and are invited to take part in an enhanced education session related to the second module. Those who are new recruits are invited to take part in the baseline enhanced education session.

Recruits which have not been followed up by the peer recruiters are followed-up by the health educators directly.

The second educational session includes topics such as negotiating safer sex, hepatitis infection, viral cross-contamination, safer injecting techniques and how to respond to drug overdose.⁸

Outcomes

In terms of recruitment, the “standard PDI” out-performed the “simplified PDI” by 35% (493 recruits versus 365 recruits, respectively). However, the IDU-recruiters in the “simplified PDI” did a significantly better job of educating their recruits at both baseline (when the recruit presented to the service), and at six-month follow-up.

The new follow-up mechanism (involving IDUs in contacting former recruits for follow-up) also doubled the PDI’s retention strength (to 75% at six-month follow-up) compared to an earlier pilot-PDI study.

At the same time, the “simplified PDI” was approximately 50% less costly in respondent fees than the “standard PDI”.

Both PDIs demonstrated about equal and significant efficacy in reducing respondents’ injection frequency, the sharing of syringes and other injection equipment, and rates of unprotected sex.

The study shows that the more IDUs are rewarded for *recruiting* over educating their peers, the more they will emphasise recruitment; the more they are rewarded for *educating* their peers over recruiting them, the more effort they will put into their education efforts. The findings of this study also demonstrated that active IDUs can deliver two different bodies of prevention information to their peers, depending on whether they are recruiting new or follow-up recruits.

Other points

Broadhead *et al* (2006) showed that this method of delivering HIV prevention education to IDUs can be transferred cross-culturally. The intervention has also been successfully piloted in Vietnam (town with a population of 32,000) and China (large township with a population of 300,000) (Broadhead *et al*, 2009).

⁸ Details of the second educational model are not included in the article. This information was received directly from Professor Broadhead.

4.6 Peer intervention – 6

Overview

Craine *et al* (2006) describe a peer education project developed in Northwest Wales. The project involved training IDUs to deliver educational messages to their peers. The evaluation sought to assess the feasibility and acceptability of the intervention.

Data on self-reported risk behaviours among IDUs was collected at baseline, and then, by the peer educators mid-way through the project and at the end of the project. However, the follow-up sample was too small to assess changes in behaviour as a result of the intervention. Therefore, the outcomes of the intervention are not reported.

Intervention aim

The intervention aimed to reduce injecting risk behaviour that can lead to the transmission of HCV and other BBVs.

Target group

Hard to reach groups of injecting drug users.

Setting

A rural area of Northwest Wales. The main site for the intervention was a small market town with a population of around 5,000, and with areas of high social deprivation. The peer educators all lived in, or close to the town.

Description of the intervention

Thirteen IDUs were recruited and trained to be peer educators. Recruits were regular users of illicit heroin and active within local drug using networks, and they were recruited from within the local substance misuse service. Over the course of the two-year project, the peer education team met formally around 25 times.

Structured questions and answers (in the format of simple quizzes) were used to put over educational messages to peers. A series of such quizzes were thus used as the basis for the initial educational exercises. Each exercise was accompanied by additional risk reduction information, and throughout the project a range of harm reduction literature was distributed. In addition, the peer educators collaborated in the design of three 'credit card' style information cards — one addressing the risks of overdose, another addressing safe injecting (which included a list of needle exchange services), and a third addressing crack cocaine use.⁹

As part of their work, the IDU educators collected data on self-reported risk behaviour among their peers at the project midpoint and once at the project endpoint. (It is not

⁹ The materials used in the intervention are available from the primary author, Noel Craine at the National Public Health Service for Wales.

clear precisely what the period of time was after baseline data collection.) The peer educators were given a small payment for each intervention they carried out.

The educational interventions developed over the course of the project. Experiences from the first year formed the basis for further interventions. By using a range of new and different educational instruments throughout the project, it was hoped that interest would be sustained both within the peer education group and the social networks targeted.

Outcomes

Information about the outcomes of the intervention is not provided in the article — although the article does report baseline data on injecting risk behaviour among a sample of 30 individuals. The ‘follow-up’ sample was of insufficient size to allow an assessment of behaviour change as a result of the intervention.

The findings nevertheless indicate that peer educational interventions are a feasible approach to reducing injecting risk among hard-to-reach IDUs. A wide range of educational interventions were carried out by the peer educators, and data collected by the peer educators indicated high levels of risk among the individuals they had contact with.

The article suggested that there were some difficulties in retaining the peer educators during the course of the project. The author made the point that the commitment to the project by the peer educators varied with other factors in their lives. For example, one was lost to the project through incarceration and another moved away from drug use entirely. In addition, the nature of opiate use means that a balance must be struck in engaging with people who may not be entirely focused on the given task. The authors make the point that the recruitment and retention of peers in research of this nature requires regular communication between the research co-ordinator(s) and the peer educators.

5 Non-peer-led interventions

The previous chapter provided information about interventions that involve drug users in the delivery of educational materials or messages, and / or in recruiting their peers to take part in an educational session delivered by professionals.

In addition to these peer interventions, there were various other types of interventions described in the literature. These do not fall neatly into a single category. However, most of them are educational interventions that are intended to be delivered by professionals within a drug treatment, needle exchange or other service setting. This section also includes information about a media campaign and a method of delivering HIV education to IDUs via a computer.

In total, seven interventions are described. These interventions are:

- a brief behavioural intervention using a standardised BBV risk assessment questionnaire
- a media campaign to prevent injecting among young homeless people
- an intervention to prevent initiation into injecting
- an educational intervention among prisoners
- computer-aided HIV / AIDS education intervention
- an enhanced counselling intervention delivered to IDUs in drug treatment
- a second intervention to prevent initiation into injecting.

The latter intervention is currently under development, and only preliminary findings from an evaluation of the intervention are reported here.

5.1 Brief behavioural intervention

Overview

Tucker *et al* (2004) described a brief behavioural intervention (BBI) developed in Australia.

Intervention aim

The aim of the intervention was to increase the awareness by IDUs of their own specific risk practices for the transmission of HCV, to motivate them to change their high-risk practices, and to assist in identifying strategies for this.

Target group

Injecting drug users.

Setting

A specialist drug treatment facility in Melbourne, Australia.

Description of the intervention

The intervention was based on the Blood-Borne Virus Transmission Risk Assessment Questionnaire (BBV-TRAQ) — a standardised BBV risk assessment instrument comprising 34 questions with three subscales on injecting risk, sexual risk and other skin penetration risk.¹⁰

The intervention consisted of a 30-minute, individually tailored brief behavioural intervention delivered in a single session. The intervention was delivered by a clinical researcher. However, it was ultimately intended to be delivered by professionals working in different types of community services.

A therapist manual was developed, but each individual intervention was guided by the individual's Risk Tally Sheet from the BBV-TRAQ. The following steps were followed with each individual:

- The clinical researcher completed the BBV-TRAQ Risk Tally Sheet, which was then used as a basis for discussion about risk and protective practices.
- The clinical researcher and participant discussed each area of risk on the Tally Sheet. The clinical researcher highlighted both high-risk practices and also what the participant was currently doing that was protective against HCV transmission (e.g., hand-washing).
- The clinical researcher then sought to elicit a response from the participant about their perceived level of risk for contracting / transmitting HCV. The

¹⁰ A copy of the BBV-TRAQ is available at:
http://eib.emcdda.europa.eu/attachements.cfm/att_7362_EN_english_bbvtraq.pdf.

clinical researcher referred to relevant educational materials and explained the potential consequences of engaging in high-risk behaviours.

- The participant was asked, using a non-confrontational counselling style, if they wanted to change any of their risk behaviours. 'No change' was a valid option.
- If the participant expressed a desire to change any of their risk behaviours, the clinical researcher recorded strategies and resources for achieving this and overcoming identified barriers.
- To complete the session, the clinical researcher provided three pamphlets on HCV and safer injecting, and highlighted the section on referrals for further information, support and counselling.

Outcomes

The primary outcome for the intervention was a change in HCV risk practices in the month following the intervention, as measured by the BBV-TRAQ. A secondary outcome was IDUs' satisfaction with the intervention.

A randomised control trial comparing this intervention with a standard information-only intervention found that there were no significant differences between the intervention and the control group in HCV risk practices in the month following the intervention. The reason for this is that both groups had significantly reduced their risk practices. However, IDUs expressed greater satisfaction with the BBI intervention, than the control group did with the standard information they received.

In particular, there were significant differences between the groups on the questions: 'How useful was this programme to your needs?' and 'How satisfactory did you find this programme?' with the experimental group expressing higher levels of satisfaction. However, responses to 'How much did you learn from this programme?' and, 'This programme would be useful to other drug users' needs,' were not significantly different.

One explanation for the lack of difference between the intervention and control groups might be that the provision of standard educational materials was equally effective as the individualised brief intervention in reducing HCV risk behaviours. Another possibility is that the additional effect of the intervention could not be detected on top of improvements that may have already been effected by the administration of the BBV-TRAQ itself. The BBV-TRAQ may have acted as a motivational and educational tool in its own right to direct the participant's attention to their own risk practices, before any formal intervention was attempted. Unpublished observations from using the BBV-TRAQ in a number of studies have shown that, following self-completion of the instrument, many IDUs wish to discuss what their scores (and newly identified risk behaviours) mean for them.

A further explanation is that the interventions delivered to the experimental and control groups were not different enough. The control group was intended to replicate what is currently available in many non-specialist community settings. However, the control group also received a considerable amount of individual attention which may have gone beyond routine practice in such settings.

5.2 Media campaign to prevent injecting

Overview

Roy *et al* (2007) described a media intervention (involving the use of posters and a prominent logo) to prevent injecting among young homeless people.

Intervention aim

To deter young homeless people (many of whom use drugs regularly) from starting to inject drugs by influencing their attitudes and perceptions about injecting.

Target group

Drug-using young homeless people aged 14-23 who had never injected drugs; who had experienced at least one homeless episode lasting a minimum of 24 hours; and who had been on the street for no more than two years.

Setting

The campaign took place in downtown Montreal (Canada). Posters were put in public places and in community organisations frequented by young homeless people.

The campaign involved the participation of seven community organisations serving either young homeless people or injecting drug users, and two medical clinics actively involved with young people in difficulties.

Description of the intervention

The intervention comprised a media campaign, involving the use of a distinctive campaign logo and six posters.¹¹ The logo and posters were developed on the basis of focus groups with members of the target audience. In addition, all campaign materials were pre-tested with young homeless people to verify whether they were attention-grabbing, intelligible and credible.

The intervention also involved the organisation of special events to attract young people's attention and stimulate discussion. These events were not described in detail in the article.

Outcomes

The evaluation found that the campaign was highly visible to the street youth targeted, and comprehension of the promoted messages was good. Most of the youth were affected by the campaign, notably due to its sensational and realistic nature. The campaign also caused them to reflect either on the negative consequences of injecting drug use in general or, on a more personal level, the consequences of their own non-injecting drug use. The posters also reinforced or confirmed the negative perceptions held by many of the young people, and reversed the positive views held by some.

¹¹ The logo and posters are illustrated in Roy *et al* (2007).

However, in the opinion of the interviewees, there are limitations to the prevention campaign's usefulness in deterring street youth from starting to inject drugs. According to the majority, it is difficult to convince a young person who is determined to inject drugs not to do so. In their view, if a young person has reached the point of wanting to inject drugs, it is because he or she has nothing to lose.

Several of the young people also felt that media prevention campaigns could only have a short-lived effect.

Current IDUs were also exposed to the campaign and some had negative reactions, feeling the campaign was too prominent in their environment and too challenging. However, others responded positively, believing such an intervention was pertinent and useful.

5.3 Intervention to prevent initiation into injecting – 1

Overview

Break the Cycle (Hunt *et al*, 2002) is an intervention that aims to prevent initiation into injecting. The intervention is based on evidence that:

- current injectors play an important role in other people’s decisions to try injecting
- most people who inject disapprove of initiating others into injecting and
- injectors do not always realise that they may be unintentionally increasing the chances of someone deciding to try injecting.

Intervention aim

The intervention aims to teach current IDUs not to initiate non-injectors into injecting.

Target group

Current injecting drug users.

Setting

The intervention was intended for use in a variety of settings — including one-to-one with a drug worker in a needle exchange or methadone treatment service.

Description of the intervention

The intervention works by training current IDUs:

- not to inject in front of non-injectors
- not to discuss injecting — especially its perceived benefits — with people who are at risk of trying it.

The intervention also develops people’s resistance to giving someone their first injection and gives people the skills they need to manage requests to give someone their first injection.

The intervention is intended to be delivered by a professional drugs worker, nurse or other health professional. During the initial evaluation of the intervention, it was delivered in a standard format which took around one hour. However, the authors considered that it would also be possible to adapt the intervention for use in group discussions, and to tailor it for particular settings and deliver it more quickly.

A detailed guide to implementing the intervention was published by Exchange Campaigns and the Department of Health (England) (Hunt *et al*, 2002).¹²

¹² This is available for download from the Exchange Supplies website (see BTC Campaign) at: www.exchangesupplies.org/drug_information/campaigns/campaigns_intro.html.

Outcomes

The intervention was evaluated in 1997 (Hunt *et al*, 1998), and the evaluation found that it was possible to train drug workers to deliver the intervention effectively, and that the intervention was acceptable, both to staff and to drug users. In addition, after receiving the intervention:

- injecting in front of non-injectors was halved
- people's disapproval of initiating others was higher
- people who took part in the intervention received fewer than half as many requests to initiate others
- the number of people initiated by those who took part in the intervention fell.¹³

¹³ Information about the evaluation was taken from the Exchange Campaigns / Department of Health guide, and not from the published evaluation. Therefore, there is no information about the timescales for follow-up among those who took part in the intervention.

5.4 Prison-based intervention

Overview

Zucker (2008) described the pilot of an educational intervention in a prison in the US state of Massachusetts.

The intervention was described as a “peer-led educational intervention” because it was based on the “Each One Teach One (EOTO) method, which was originally developed as a method for using community resources and support for teaching of adult literacy. The theory behind the EOTO approach is that any “student” has the opportunity to become a “teacher.” The method uses a relationship-based strategy in which learners know and trust their teacher and perceive him / her to be an authority on the subject matter through life experience. Positive outcomes from the EOTO approach are seen to be related to a positive interpersonal relationship between the teacher and learner.

Although this intervention was described as “peer-led”, the pilot evaluation focused entirely on the work carried out by a professional (addictions nurse) among a small number of prisoners. Therefore, this intervention is not included with the peer interventions described in the previous chapter.

Intervention aim

The aim of the intervention was Hepatitis C prevention.

Target group

Prisoners.

Setting

A single prison in the US state of Massachusetts.

Description of the intervention

The intervention was delivered by a specialist addictions nurse, and involved prisoners attending a one-hour class for six weeks. The article did not describe the educational intervention in detail.

Teaching was aided by using a manual created for this programme by prisoners and nursing students. Prisoners were invited to participate in the programme, and participation was voluntary. Twenty-five prisoners enrolled, although seven of these withdrew prior to completion. Learning outcomes were assessed by measuring changes in self-reported behaviour, knowledge and relationship (the prisoners’ view of teacher).

Outcomes

Knowledge, behaviour and relationship scores improved after the intervention. However, none of the changes were statistically significant. This may be due to the very small sample size.

The report stated that “the teacher instilled in the learner a responsibility to continue to disseminate HCV education to others by using their skill and knowledge in relationship with the new learner.” However, there was no discussion in the article about the extent to which the 18 prisoners who completed the programme passed on their knowledge to their peers.

5.5 Computer-aided HIV / AIDS educational intervention

Overview

Marsch & Bickel (2004) describe an educational intervention that involved the use of fluency-based computer-aided instruction (CAI) technology. Fluency-based CAI methodology uses a computer as a medium of instruction by selectively presenting information, by requiring active responses from the user to queries designed to test knowledge acquisition, and by providing immediate feedback to the user's responses. This particular intervention presented information on HIV / AIDS, along with information on how to reduce drug- and sex-related HIV risk behaviour.

Intervention aim

To provide education to IDUs in preventing the spread of HIV using an innovative approach involving computer-aided instruction.

Target group

IDUs. All participants had recently entered drug treatment in a buprenorphine programme.

Setting

A specialist drug treatment service in Vermont, USA.

Description of the intervention

The intervention involved between three and five 30-minute sessions delivered over the course of a week. (The number of sessions varied because participants were able to complete the training at their own pace.) The initial session was a computerised training module which explained to them how the computer-based HIV education program was designed and gave them the opportunity to practice interacting with the computer (using the keyboard and mouse).

Participants then completed five modules on HIV / AIDS education that covered:

1. basic HIV / AIDS information including a description of what HIV / AIDS are
2. how drug use may place someone at risk for HIV
3. how one can effectively reduce drug-related HIV risk behaviours
4. how sexual behaviour can place one at risk of HIV
5. how one can effectively reduce sex-related HIV risk behaviours.

In each module, factual information was presented on the computer screen in a series of frames, with each frame addressing a key issue related to the module topic. Participants controlled the rate of presentation of information and had an unrestricted viewing window in which they could scroll back through previous screens of text if desired.

Upon completing each module, the user was presented with a series of multiple-choice questions, based on the information that was just presented. Each question had a minimum of four response choices. After all the questions were presented in multiple-choice format, a series of questions in fill-in-the-blank format were presented which addressed the most important facts from the multiple-choice question format. This required the user to recall the correct response rather than simply recognising the correct response.

Users were given immediate feedback on their responses to help them to effectively learn the information. When responding incorrectly, the user was given the correct answer and an explanation of why that response choice was the correct answer.

Outcomes

A randomised trial was carried out to compare the computer-delivered education to standard therapist-delivered education. This found that participants who received the computer-based intervention learned significantly more information about HIV prevention, retained significantly more information at a three-month follow-up, liked the teaching medium significantly more, and demonstrated significantly greater interest in obtaining further information about HIV / AIDS than did the comparison group. In particular:

- **Improvements in knowledge:** Twenty-four hours after completing the intervention, computer-based participants had an average of 97% accuracy on a series of questions designed to test their HIV / AIDS knowledge, compared to 89% accuracy among the comparison group. At three months follow-up, the computer-based group achieved 96% accuracy compared to 89% among the comparison group.
- **Usefulness of the intervention:** Participants in both groups rated their different educational experiences highly, and both groups indicated that their educational experiences had clarified misconceptions they had about HIV / AIDS. However, the computer-based group rated their educational intervention as significantly more interesting than did the participants who received the therapist-based intervention. The computer-based group also thought they had learned significantly more new information about HIV / AIDS compared to the comparison group.
- **Request for further information:** 80% of participants who received the computer-based education requested additional educational materials regarding HIV / AIDS to take with them at the conclusion of their intervention compared to 40% of participants in the comparison group. Furthermore, 80% of participants in the computer-based group compared to 46% in the comparison group requested information on where they could be tested locally for HIV. (This latter difference was not statistically significant.)

Individuals in both groups reported significant reductions in HIV risk behaviour. There were no significant between-group differences in relation to this outcome.

5.6 Counselling intervention

Overview

Abou-Saleh *et al* (2008) and Davis & Abou-Saleh (2008) describe an enhanced prevention counselling intervention, which provides educational messages to IDUs in treatment. The intervention was evaluated in a randomised control trial comparing it to “simple educational counselling”.

This intervention was found not to be efficacious. However, it is included here because it provides useful learning points for those involved in the development of educational initiatives.

Intervention aim

To reduce risk behaviours associated with the transmission of Hepatitis C among injecting drug users.

Target group

IDUs recruited from drug treatment services in the south of England. All participants were confirmed to be HCV seronegative before to being invited to take part.

Setting

The intervention was delivered within a drug treatment service.

Description of the intervention

The intervention involved four sessions, each lasting between 40-60 minutes, which were to be completed within eight weeks of entry to the programme. The intervention was delivered by regular staff of community drug services who had all received intensive training in how to deliver the intervention.

A manual was developed for the intervention, and this was based on a number of other treatment intervention manuals. Exercises and elements were taken from substance misuse cognitive behavioural treatments. The manual is available from one of the authors.¹⁴

Session 1 had the aim of:

- establishing rapport and a counselling relationship consistent with the principles of Motivational Interviewing
- increasing knowledge and awareness of HCV risk behaviours and the consequences of HCV infection
- assessing the individual’s risk behaviours, self-efficacy and outcome expectancies.

¹⁴ Paul Davis: Paul.Davis@candi.nhs.uk.

The remaining three sessions began with a review of progress on targets set at the previous session, assessment of any difficulties in applying coping strategies, and assessment of the person's motivational state.

In the second session, targets for intervention are planned (e.g., injecting equipment sharing). Each session ends with a behavioural goal-setting exercise in which the participant agrees to take a small behavioural risk-reduction step that could be achieved by the next session.

At the end of the final session, a longer-term, individualised risk reduction plan is agreed upon.

Various strategies were employed to foster compliance with the intervention, including the development of a positive therapeutic relationship between client and counsellor, individual risk reduction plans to take home as a reminder of behavioural goals, appointment cards, combining sessions with regular clinic visits (e.g., for methadone prescriptions), and phoning the person on the day of visits as a reminder.

Outcomes

The intervention was evaluated using a randomised control trial involving 95 participants. Of these, 43 were allocated to the enhanced prevention counselling (intervention) group and 52 to a control group which received simple educational counselling.

The primary outcome was HCV seroconversion rate, six months and twelve months after baseline. Secondary outcomes included various measures of injecting risk behaviour, self-efficacy, readiness to change and general knowledge about HCV.

Of the sixty-two IDUs followed up at 12 months, eight were found to be HCV positive — three who attended the enhanced prevention counselling and five who received simple educational counselling. There were no significant differences between the two groups in any of the secondary outcomes (so no intervention effect). However, there were significant improvements in alcohol use, health, finances, injecting risk and sexual risk behaviour for *both* groups at six months follow-up (effect of time).

The evaluation was unable to prove the efficacy of the intervention in comparison with simple educational counselling. The authors suggest this is likely to be related to low recruitment and retention rates among participants. Of the 43 people who were randomised to the enhanced prevention counselling, 37 attended for six-month follow-up. Of these, only 17 had engaged with the intervention and only seven completed all four sessions; 20 of the original 43 participants had not attended even one session, despite the researchers' attempts to contact people to encourage them to attend.

The authors suggest that the poor attendance was likely due to IDUs having to attend another appointment *in addition to* their regular methadone treatment appointment.

5.7 Intervention to prevent initiation into injecting – 2

Overview

One Shot is an intervention being developed by Beek *et al* (unpublished) under the auspices of the POTTI (Prevention of the Transition to Injecting) Project.¹⁵ The intervention has been informed (among other things) by the same research that led to the development of the Break the Cycle intervention (described in section 5.3).

Intervention aim

The intervention is being developed in two phases. Phase I focuses on preventing the transition to injecting among young people at risk. Phase I objectives are:

- to increase young people's knowledge of HCV, risk behaviours and means of prevention
- to increase their understanding of the risks specific to injecting drug use compared to other modes of drug administration
- to increase their knowledge of blood awareness and risk assessment.

Phase 2 focuses on preventing current IDUs from initiating others. Phase 2 objectives are:

- to develop an appreciation of the impact of injecting in front of non-injectors
- to increase knowledge of injecting-specific risks and harms
- to empower IDUs to discourage initiation requests where appropriate
- to increase knowledge of safer injecting among current IDUs to decrease the risk of HCV transmission at the time of initiation.

Target group

Young people at risk of transition to injecting *and* existing IDUs who have a role in initiating others into injecting.

Setting

The Phase 1 intervention has been piloted in an independent school in East Sydney, a drug detoxification centre and a crisis accommodation service / refuge for adolescents. The intention is that the intervention could be rolled out through schools, juvenile justice services and youth work services.

The Phase 2 intervention will be delivered through services in contact with IDUs.

Description of the intervention

The Phase 1 intervention involves one day (three sessions) focusing on HCV prevention and resilience building. It is informed by the Social Influence and Health Belief models, Social Learning theory and Stages of Change.

¹⁵ The material presented here is based on a set of slides presented by Dr Ingrid van Beek during a seminar at the National Centre in HIV Social Research, University of New South Wales.

The Phase 2 intervention is also a one-day intervention. A nine-minute DVD, called “One Shot” has been created. The DVD tells the story of three main characters: a brother, sister and an older friend who is an IDU. The brother has recently begun injecting and the sister is a non-injector who has become curious about injecting after spending time with her brother and his IDU friends. The DVD covers a 24-hour period during which the younger sister is eventually initiated into injecting drug use. Professional actors play the characters and the clients of a local drug service tell their real-life stories. Scenes include a “safer” injecting module.

A hierarchy of messages is communicated:

1. Avoid injecting in the presence of non-injectors and situations where others may ask to be initiated.
2. Inform potential injectors of the specific risks associated with injecting to discourage their transition and to ensure that it is an “informed” decision.
3. If it seems inevitable that someone will make this transition, inform them about safer injecting techniques, where to obtain clean injecting equipment, how to prevent overdose and how to respond in the event of an overdose — to ensure that they have relevant information at this crucial early stage.
4. Do not inject others; instead, instruct others how to self-inject.

A manual will be developed to accompany the Phase 2 part of the intervention. The DVD and manual will be disseminated to services in contact with IDUs.

Outcomes

Evaluation of the Phase 1 pilot found that participants’ knowledge about the health risks of injecting and HCV in particular improved immediately post-intervention. However, although the effects were sustained above baseline, the effect decreased progressively after one month and three months follow-up.

The Phase 2 intervention is currently under development. In a focus group with harm reduction service clients (n=16), it was found that:

- nearly all were injected by someone else the first time they injected
- more than half had injected someone else for their first time
- most felt uncomfortable about this
- most had injected in front of someone they knew was a non-injector.

Other issues that arose in the focus group included:

- IDUs were worried about others “butchering” themselves if they didn’t assist
- the incentive of a ‘free hit’ was prevalent
- several IDUs volunteered that initiation had been associated with overdose — themselves or the person they had injected for the first time
- there was a significant level of client interest in this issue.

The authors make the point that in an intervention such as this, there are difficulties in assessing the extent to which changes in knowledge translate to changes in behaviour.

6 Unevaluated educational resources

Along with the interventions described in the previous sections, this review identified a variety of educational resources / materials which have been used for HIV / HCV prevention among injecting drug users. Information about these resources came from the experts who were interviewed as part of this study. It is important to note that the majority of these resources have not been formally evaluated. (The exception is one of the Lifeline publications.) Many of the resources have been developed on the basis of research and in some cases, additional input / feedback from IDUs. However, without formal evaluation of the use of these materials, it is not possible to know what whether they achieve the effect they are intended to achieve, or whether unintentional outcomes may result from their use.

6.1 Exchange Supplies website (www.exchangesupplies.org)

Exchange Supplies is described by its creators as a social enterprise. The organisation was set up by drug workers to improve harm reduction response to drug use. It has developed and marketed a variety of products including paraphernalia to enable safer injecting and a range of educational resources (DVDs, leaflets, posters, handbooks and pamphlets). Many of the Exchange Supplies publications and resources are available for download from their website, free of charge.¹⁶

Educational resources which are relevant to the prevention of BBVs include:

- *Safer injecting* (handbook)
- *Understanding viral transmission* (DVD)
- *Cleaning used works* (leaflet)
- *How small is the Hep C virus?* (leaflet)
- *Break the cycle: Preventing initiation into injecting* (campaign materials)

6.2 Harm Reduction Works (www.harmreductionworks.org.uk)

The Harm Reduction Works campaign was developed by Exchange Supplies for the National Treatment Agency. The campaign is part of the implementation of the Department of Health publication, *Reducing Drug Related Harm: An Action Plan* (2007), which aims to reduce drug-related illness and death. The website provides a variety of educational resources (DVDs, leaflets, posters and pamphlets) for drug users, their carers and the commissioners and providers of services for drug users. It covers the following topics:

- HIV
- overdose prevention
- safer injecting practice
- Hepatitis B and C viruses
- injecting crack cocaine
- femoral / groin injecting

¹⁶ Further information about Exchange Supplies educational resources available for download or purchase is at: www.exchangesupplies.org/drug_information/drug_information_intro.html.

Educational materials targeted at drug users aim to promote safer injecting and more hygienic injecting practices.

6.3 Lifeline Publications (www.lifelinepublications.org/)

Provides a range of drug education and information resources that are based on latest research and other evidence, accessible to the intended target audience(s), and priced as low as possible to enable purchasers to give them out to clients for free. Materials take the form of booklets, posters, comic strips many of which have been targeted very specifically towards sub-groups of drug users.

The website contains a series of guides on safer injecting practices. Some of the titles include:

- *The viruses*: described as “a rather rude guide for drug injectors” on the “microscope menaces of the human body”
- *Hugo, the man with the talking liver*: information for injecting drug users on Hepatitis C in a cartoon format
- *Dig injecting guide*: includes information on anatomy and injection sites, the preparation and injection of heroin, and highlights the dangers associated with blood borne viruses, femoral injection and overdose
- *Better injecting*: provides a step-by-step guide to injecting heroin, highlighting the relevant dangers at each stage, using a predominantly graphic format that is accessible to those with lower levels of literacy
- *Smoking brown*: predominantly graphic guide to smoking heroin, including information to encourage injectors to switch to smoking, and to prevent drug-related death by reducing the risk of overdose for those injectors returning to use following a break
- *Injecting anabolic steroids*: a step by step guide to injecting anabolic steroids.

Lifeline has done some qualitative evaluation of their materials, involving focus group discussions with service users and service providers. For example, in 2007, Lifeline Publications produced a set of 50 message cards containing advice about safer injecting in pictorial and text form. These *Simple Safer Shooting (SSS)* cards were designed to be given out with injecting equipment to IDUs attending needle exchange services in Salford, with the aim of reducing risky injecting and its consequences. A qualitative evaluation was carried out on a sub-set of these cards (Newcombe, 2008), focusing on such questions as:

- Are the cards a useful way of reminding / informing IDUs of the messages about avoiding needle-sharing and BBVs, etc?
- Is the single-message card format suited to the task?
- Are the graphic designs understood and liked?
- Are the messages clear, accurate and comprehensible?

6.4 Australian Injecting and Illicit Drug Users' League (AIVL) **(www.aivl.org.au/)**

AIVL is a national membership organisation representing state and territory drug user organisations in Australia. It is a peer-based organisation which responds to issues of national significance for people who use or who have used illicit drugs.

AIVL coordinates an educational programme which involves:

- developing peer education resources and campaigns focused on hepatitis C prevention, and treatment and harm reduction
- providing training for peer educators
- researching issues affecting marginalised groups of illicit drug users and developing targeted peer education responses
- disseminating the latest Hepatitis C education information and research to AIVL members and other service providers
- providing web-based education on Hepatitis C and related issues
- representing the perspective of people who use illicit drugs at national Hepatitis C related conferences, committees, forums and workshops.

The organisation's website has a range of educational resources (fact sheets, posters, booklets and other materials) available for download. Some of these have been designed for the indigenous Australian aboriginal population and therefore may not be transferrable to a Scottish context, while others may be relevant to a Scottish injecting population.

As mentioned at the beginning of Chapter 4, the AIVL website also contains a useful document which sets out a framework for conducting peer education within drug-related agencies (AIVL, 2006). This is available at:
www.aivl.org.au/files/FrameworkforPeerEducation.pdf.

7 Improving the effectiveness of educational interventions

As stated in the introduction to this report, behaviour change is one of the main objectives of educational interventions that aim to prevent transmission of HCV and other blood-borne viruses. This review highlighted a number of challenges associated with educating IDUs in this area, as well as some factors that help contribute to the effectiveness of educational interventions.

7.1 Challenges / difficulties in delivering educational interventions

7.1.1 The diversity of the injecting population

In a qualitative study among recreational drug users (including a number of injectors) in Sydney, Australia, Ellard (2007) investigated drug use, knowledge of Hepatitis C and risk minimisation. The study found that this group of drug users considered themselves to be well-informed about the drugs they used, and in control of their drug use. However, their knowledge of Hepatitis C was limited and vague. Prevention material targeted at IDUs was largely ignored by this group as irrelevant to them.

The findings suggested that stereotypes of who fits the profile of an injector need to be overcome and the heterogeneity of injecting drug users needs to be acknowledged in developing educational messages. The author concluded that educational messages should focus on commonality of practice (injecting), but acknowledge a diversity of lifestyle and experience.

7.1.2 Information arrives too late

Treloar & Abelson (2005) carried out a survey of 336 young IDUs (<25 years) from three sites in Australia to find out about where they get drug-related information. A sample of 24 IDUs also participated in in-depth interviews. Survey results indicated that the majority of IDUs acquired information from formal sources such as pamphlets and injecting equipment provision (IEP) services. However, the interview data suggested that this information was generally acquired well after injecting had already begun.

In addition, the majority of survey participants reported that they had passed on information to their peers. However, the interview data showed that many issues were discussed among injectors — not only safe injecting — and that inaccuracy of information from some injectors could result in a perpetuation of misinformation.

7.1.3 Incorrect assumptions made about IDUs' knowledge

Carruthers (2005) investigated the risk management strategies which HCV-positive injectors take to prevent further transmission of HCV. In interviews with 111 individuals, she found that the majority could recognise the risks associated with certain injecting scenarios that were presented to them, and they could describe actions by which they could reduce those risks. However, not all the actions described would necessarily be effective because they relied on unproven methods

of removing viruses from used needles and syringes, or they assumed that other injectors had equivalent knowledge to that of the respondent.

One of the experts interviewed for this review also highlighted that mistaken assumptions about IDU knowledge can also be made among professionals. This individual was involved in the delivery of training on overdose prevention to professionals working with young IDUs in agencies that are not specialist drug services — for example, mental health, employability or housing services. A common misconception among staff in these agencies is that the young people they work with are already well-informed and aware of the risks associated with injecting. This mistaken assumption can result in staff not making the effort to educate these young people themselves.

7.1.4 Literacy difficulties

Taylor (2007) undertook a study among 150 IDUs attending drug treatment services in Glasgow to assess their reading levels, and to determine IDUs' preferred methods for receiving information. The findings showed that at least a third of those taking part in the study would have had difficulty reading current HCV educational literature. Furthermore, this study found that the vast majority of IDUs would prefer to receive information verbally, rather than through written materials.

7.1.5 Information about risk alone is insufficient to deter injecting

In a survey among young amphetamine injectors, Davey *et al* (2006) found a lack of knowledge about the risk of acquiring Hepatitis C from injecting, and few of the injectors in this study felt that they were susceptible to the virus. Moreover, few individuals reported that the threat of Hepatitis C was enough to result in a decision to stop injecting. Rather, the decision to cease injecting is often taken for personal reasons, such as being “sick of using,” “wanting to get their act together,” and starting a family. The authors concluded that Hepatitis C prevention efforts should continue to focus on harm reduction, rather than cessation of injecting.

Similar findings were reported by Carruthers & Loxley (2002) in interviews with 65 novice heroin injectors. This study found that attitudes towards the promotion of non-injecting routes of administration were largely negative. A small proportion of this group supported the use of non-injecting methods for health reasons, but the majority were dismissive of the idea. The main barriers to continued injecting, from the injectors' perspectives, were related to the cost and the effects of the drugs.

7.1.6 Routine nature of injecting

Treloar *et al* (in press) undertook research that explored IDUs' injecting practices by taking video recordings of injecting episodes and then interviewing IDUs while they were reviewing their own video recordings. The study found that IDU participants were unable to provide a detailed description of their injecting practice, could not recall why they did things in the way they did, and described learned injecting behaviours as “dropping out of mind.”

Beynon *et al* (in press) found similar results in a study of over 200 IDUs, which examined the different responses that IDUs give when questioned about their

experiences of sharing injecting paraphernalia using written questions ('written cues') versus showing them video recordings of IDUs engaged in sharing behaviours ('visual cues'). Respondents provided significantly different responses to questions about sharing when asked using visual versus written cues. More specifically, when asked through written cues, a considerable proportion of IDUs said they had *never* shared via front / back loading and via sharing water / bleach for flushing out injecting equipment. However, when shown these behaviours in a video, they confirmed they *had* participated in these behaviours.

8 Discussion and recommendations

This study set out to identify educational interventions which may be effective in preventing the transmission of HCV among injecting drugs users or those who are at risk of injecting. This work is important in the context of an increasing emphasis across Scotland on outcome-focused planning. Senior managers and service commissioners need to have information about interventions that are likely to produce the best outcomes with the limited resources available.

The review identified only a small number of relevant educational interventions – thirteen evaluated interventions are described. These have been identified from the published and “grey” literature for the period 2000 – 2009. Before going on to discuss the findings, it is necessary to comment first on the quality of the evidence.

8.1 Comment on the quality evidence

Eight of the 13 interventions described in this review were evaluated using randomised control trial (RCT) or experimental research designs. However, in one case (Abou-Saleh *et al*, 2008), the poor retention of participants in the experimental (intervention) group decreases the reliability of the findings of this study.

A ninth intervention (the NIDA community outreach model) was developed and refined on the basis of 15 years of research, involving both experimental and qualitative research studies.

The other interventions were developed and evaluated using mainly qualitative methods, or less robust single-group, pre-test, post-test research designs. While the evidence in relation to these interventions does not meet the same “gold-star” standard of those evaluated through RCT designs, there is nevertheless some useful learning to be gained from the descriptions of these interventions.

8.2 Effectiveness of the interventions

It was notable that a few of the interventions described in this report set themselves very high aims – namely, the prevention of HIV or HCV — and HIV / HCV seroconversion was the primary outcome measured. Most of the interventions focused on reducing HIV / HCV risk behaviour, and in relation to this, nearly all had positive outcomes. None resulted in poor outcomes.¹⁷ However, in several cases, interventions that were evaluated through RCT designs found relatively few significant differences between the intervention group and the control or comparison group on measures of injecting risk behaviour at follow-up.

Various explanations have been given in the literature for this. One explanation is that the control / comparison group intervention was overly powerful — very few of the comparison groups received *no* intervention; most received information or some standard form of education, and in some cases, they also received HIV / HCV testing, just as the intervention group did. The provision of HIV / HCV testing

¹⁷ The evaluation by Craine *et al* (2006) did not report on outcomes for the intended target group.

involves formal pre- and post-test discussion, which in itself has been shown to result in reductions in injecting risk behaviour (Aggleton *et al*, 2005). In addition, a failure to find a between-group effect may be due to confounding factors associated with risk prior to the intervention. An intervention is likely to result in less substantial change among low-risk injectors than among high-risk injectors. Williams *et al* (2001) therefore argue that changes in behaviour following an intervention should be analysed separately among low-risk and high-risk IDUs as the strongest effects are likely to be seen among the higher-risk IDUs.

Only one of the interventions included in this report, the counselling intervention described in section 5.6 (Abou-Saleh *et al*, 2008 and Davis & Abou-Saleh, 2008), was reported not to be efficacious, in that it did not work as expected. This particular intervention had difficulties with participant retention, which may have resulted from the intervention design itself — four sessions, each lasting between 40-60 minutes, to be completed over eight weeks. The intervention was targeted at IDUs in treatment, but the educational sessions were not combined with the injector's regular appointment at the drugs service. This required the participant to attend the service for an additional appointment.

It should be noted that the prison-based pilot intervention described in section 5.4 (Zucker, 2008), also had poor retention rates, and the lack of robust evaluation design calls into question the reliability of the findings in relation to this intervention.

8.3 Intervention design / mode of delivery

The findings of this review suggest that the intervention design, or the mode by which educational messages are delivered, can play an important role in the success of an intervention.

This review found good and consistent evidence that peer educational interventions can be effective, particularly in reaching those who are not otherwise in contact with services. Other research has shown that there is an “information gap” in the period between initiation into injecting and initial contact with needle exchange or treatment agencies. During this period, the only source of information for some injectors is other injectors. And in many cases, the information received from other injectors is inaccurate or incomplete. It is absolutely crucial to address this gap if the spread of HCV is to be reduced.

For this reason alone, there are potentially huge benefits in developing peer education interventions which are able to tap into the social networks of injectors. However, these interventions need to be designed and managed carefully, and the characteristics of the peer educator are likely to be important in the success of the intervention. In addition, the commitment of the peer educators may vary with other factors in their lives.

The peer-driven intervention described in sections 4.4 and 4.5 (Heckathorn *et al* (1999), and Broadhead *et al* (2006)) seems to address some of the problems which can be associated with a complete reliance on peer educators. This intervention works by giving IDUs a small incentive to pass on accurate information to others in their network and to recruit them to attend a more formal educational session delivered by a professional. What is striking about the peer-driven intervention is the

effort that IDUs are willing to make for relatively small monetary rewards, and the far-reaching effect of those efforts.

In terms of the non-peer-related interventions described in this report, the ones which seemed to be most promising, either in terms of changing IDU behaviour or improving IDU knowledge, are the brief behavioural intervention (section 5.1), the “Break the Cycle” intervention (section 5.3) and the computer-aided educational intervention (section 5.5). Evaluation of the brief behavioural intervention and the computer-aided educational intervention found no differences in reported behavioural outcomes between the intervention group and a control group which received educational information delivered in a standard way. However, in the case of the computer-aided educational intervention, there were other positive outcomes from the intervention, including increased learning and greater retention of information. In addition, in both interventions, clients expressed greater satisfaction with the intervention mode of delivery than they did with the control.

There is insufficient information to assess the effectiveness of the “One Shot” intervention (section 5.7). However, one might expect positive outcomes from an intervention based on “Break the Cycle”, which also makes use of audio-visual materials to reinforce messages communicated verbally during educational sessions.

8.4 Factors that contribute to the effectiveness of educational interventions

In contrast to the challenges and difficulties in delivering BBV educational interventions to injecting drug users, described in Chapter 7, the findings of this review, and the comments of the experts who were interviewed, suggest that there are a number of factors that help contribute to the effectiveness of educational interventions. In short, good educational interventions:

- require minimal literacy
- are interactive (allow for discussion, sharing of experience)
- are supported with audio-visual resources
- use appropriate language
- are relevant and tailored specifically and carefully to the target group
- allow people to learn at their own pace
- give people opportunities to practice new behaviours
- are delivered by people with credibility
- are delivered regularly and consistently.

Knowledge of HIV/HCV risk alone is unlikely to be enough to bring about a change in behaviour. IDUs need to know the benefits of risk reduction and they need to be given the skills necessary to negotiate safer injecting with their.

The US-based National Institute of Drug Abuse has published an evidence-based guide to HIV prevention in drug-using populations (NIDA, 2002). This guide outlines a set of principles which are intended to inform the development of services targeted at this group. One of the principles states that:

“[R]isk reduction information alone cannot help drug users and their sex partners make lasting behavioural changes. In addition to offering accurate and up-to-date information on risky behaviours, effective

HIV/AIDS prevention programs focus on enhancing individuals' motivation to change their behavioural patterns, teaching concrete strategies and behavioural skills to reduce risk, providing tools for risk reduction, and reinforcing positive behaviour change.”

The literature on educational interventions for IDUs seems clear that simply giving people leaflets is unlikely to be very effective. At the very least, the leaflet needs to be written in simple and appropriate language, and the professional giving out the leaflet needs to take some time to engage the recipient in discussion over the messages included in the leaflet. The leaflet is likely to be even more effective if it is provided as part of a wider intervention, such as HIV / HCV testing, drug treatment or an interactive motivational session.

8.5 Transferring the interventions to a Scottish context

All of the interventions described in this report could be implemented in a drug treatment service or specialist needle exchange context in Scotland. Needle exchange services, or injecting equipment provision (IEP) services, as they are increasingly called in Scotland, are well-placed to deliver HCV educational interventions to IDUs.

However, none of the interventions described here would seem to be appropriate for use in a community pharmacy needle exchange setting because of the time and space required to deliver them. In some cases, the intervention requires the participant to attend multiple sessions over a period of time. Even in the case of the brief behavioural intervention (described in section 5.1) and the Break the Cycle intervention (section 5.3), which are delivered in a single session, at least 30 minutes would be needed and this amount of time is unlikely to be available in a busy community pharmacy setting.

Nevertheless, the new Scottish guidelines for injecting equipment provision (IEP) services (to be published in July 2009) will require all IEP services (including community pharmacy services) to ask some basic assessment questions the first time a person presents to the service. This initial assessment provides an ideal opportunity to engage with IDUs in relation to safer injecting practices, and could provide a means to refer IDUs to specialist services where they could participate in more intensive educational interventions.

On the other hand, it may be possible to supplement written materials traditionally given out by pharmacies with DVDs. The distribution of DVDs could be followed-up, either by a community pharmacist or a specialist needle exchange worker using a pharmacy consultation room as a base. Follow-up might entail, among other things, asking IDUs if they had any questions about the information in the DVD, demonstrating the correct single-person use of injecting equipment and referral to a specialist service for more information.

Pharmacy consultation rooms could also conceivably be used to deliver computer-aided educational interventions such as described in section 5.5, although again, because of the time required, this type of intervention may be more suitable for a specialist needle exchange or drug treatment service.

8.6 Recommendations

Based on the evidence available, and considering the urgent need to reach new IDUs and potential IDUs as quickly as possible with HCV educational messages, a number of recommendations are made.

First, it is recommended that local areas in Scotland take steps, through specialist needle exchange and drug treatment services, to develop peer interventions as a means of delivering educational information to other IDUs. The peer-driven intervention described in sections 4.4 and 4.5 (Heckathorn *et al* (1999), and Broadhead *et al* (2006)) seems to be particularly promising, and the educational messages delivered through this intervention could easily be adapted as necessary for a Scottish context. This intervention has been used successfully in the US, Russia, China and Vietnam, and could almost certainly be used successfully in Scotland as well. Moreover, in Scotland, there is a precedent for incentive-based interventions in the smoking cessation field.¹⁸ A further advantage of the peer-driven intervention is that it is relatively inexpensive compared to traditional peer outreach services. However, it is important to bear in mind that there would be costs associated with the administration of the intervention, and the salaries of professional staff involved in the delivery of the formal educational sessions.

A question that would need to be answered in relation to the peer-driven intervention is: what form does the incentive take? In all of the studies published on this intervention, the incentive was a small cash payment. It is not clear whether the intervention would work equally well if vouchers were used as the incentive. The difficulty with vouchers is that they would need to be for a service that the IDU wants and is able to use. If a grocery store voucher is provided to individuals who do not live near that grocery store, then the value of the incentive is significantly reduced. Despite the potential “political” sensitivities associated with giving IDUs cash incentives, it is suggested that the benefits may far outweigh these concerns.

It is not clear from the evidence available whether and how the peer-led intervention would work in the very rural and remote areas of Scotland. Therefore, it is recommended that a formal trial be undertaken to test this. It may be feasible to adapt the intervention so that IDUs can recruit their peers to attend educational sessions in multiple locations over a large geographical area, rather than a single central location. However, a method of identifying participants would need to be put in place to ensure that the same participants were not attending multiple educational sessions in different locations.

Until such time as a trial of the peer-driven intervention can be undertaken and evaluated, it is recommended that other, more traditional forms of peer outreach (such as described in sections 4.1, 4.2 and 4.3), are implemented in rural areas. Again, these could be delivered through specialist needle exchange or drug treatment services.

¹⁸ See, for example, information from NHS Tayside on the smoking cessation scheme, “Giving it up for Baby”: www.nhstayside.scot.nhs.uk/about_nhstay/committees/05_dchp/19062008/item5.1.pdf.

It is recommended that local areas should supplement their peer interventions with at least one of the more promising non-peer-related interventions described in Chapter 5. These might include the brief behavioural intervention (section 5.1), “Break the Cycle” (section 5.3) or the computer-aided educational intervention (section 5.5). The Break the Cycle intervention has, in fact, been known in Scotland for some time, but it is not clear to what extent services have attempted to implement it as it was intended to be implemented.

As discussed above, there are some practical difficulties with delivering HCV educational interventions through community pharmacy services. Nevertheless, large numbers of IDUs have regular contact with pharmacy services across Scotland (either through needle exchange, or through opiate substitute dispensing), and efforts must therefore be made to maximise the positive impact of these contacts. In particular, community pharmacists should not make the mistake of thinking that their IDU customers are already well-informed about safer injecting practices and the serious risks associated with unsafe practices. Local areas should ensure that pharmacists are trained to deliver accurate information about safer injecting practices, and that they are able to answer questions or proactively refer IDUs to further information where necessary.

In addition, it is recommended that written educational materials traditionally distributed through pharmacy services should be supplemented with good quality, graphical, or audio-visual materials, some of which may be acquired through the websites listed in Chapter 6. Client feedback on these materials should be sought to determine their appropriateness for a Scottish context.

It is also recommended that local areas assess the feasibility of implementing a brief behavioural intervention, similar to that described in section 5.1 within a pharmacy context. It is suggested that such an intervention may best be delivered by a nurse or a needle exchange outreach worker based in a pharmacy consultation room.

9 References

9.1 Reviews of educational interventions to prevent HIV / HCV transmission

Aggleton P, Jenkins P & Malcolm A (2005) HIV/AIDS and injecting drug use: Information, education and communication, *International Journal of Drug Policy*, Dec; 16(S1): 21-30.

Palmateer N, Kimber J, Hickman M, Hutchinson S, Rhodes T & Goldberg D (2008) Evidence for the effectiveness of harm reduction interventions in preventing Hepatitis C transmission among injecting drug users: a review of reviews. Health Protection Scotland. Published literature — primary studies

9.2 Published primary studies describing relevant interventions

Abou-Saleh M, Davis P, Rice P, Checinski K, Drummond C, Maxwell D, Godfrey C, John C, Corrin B, Tibbs C, Oyefeso A, de Ruiter M & Ghodse H (2008) The effectiveness of behavioural interventions in the primary prevention of Hepatitis C amongst injecting drug users: a randomised controlled trial and lessons learned. *Harm Reduction Journal*, 5: 25.

Broadhead RS, Heckathorn DD, Grund J-PC, Stern A & Anthony DL (1995) Drug users versus outreach workers in combating AIDS: Preliminary results of a peer-driven intervention. *Journal of Drug Issues*, 25(3): 531-564.

Broadhead RS, Volkanevsky VL, Rydanova T, Ryabkova M, Borch C, Van Hulst Y, Fullerton A, Sergeev B & Heckathorn DD (2006) Peer-driven HIV interventions for drug injectors in Russia: First year impact results of a field experiment. *International Journal of Drug Policy*, 17(5): 379-392.

Broadhead RS, Hammett TM, Kling R, Ngu D, Liu W, Chen Y, Quyen HN, Binh KT, Tren HV, Borch C, Gauchat G and Des Jarlais DC (2009, forthcoming) Peer-driven interventions in Vietnam and China to prevent HIV: A pilot study targeting injection drug users. *Journal of Drug Issues*, Fall.

Craine N, Walker AM, Williamson S & Bottomley T (2006) Reducing the risk of exposure to HCV amongst injecting drug users: Lessons from a peer intervention project in Northwest Wales. *Journal of Substance Use*, June; 11(3): 217-227.

Davis P & Abou-Saleh MT (2008) Developing an enhanced counseling intervention for the primary prevention of Hepatitis C among injecting drug users. *Addictive Disorders & Their Treatment*, 7(2): 65-75.

Garfein RS, Golub ET, Greenberg AE, Hagan H, Hanson DL, Hudson SM, Kapadia F, Latka MH, Ouellet LJ, Purcell DW, Strathdee SA and Thiede H for the DUIT Study Team (2007) A peer-education intervention to reduce injection risk behaviors for HIV and hepatitis C virus infection in young injection drug users. *AIDS*, 21: 1923-1932.

Hunt N, Stillwell G, Taylor C and Griffiths P (1998) Evaluation of a brief intervention to reduce initiation into injecting. *Drugs: Education, Prevention and Policy*, 5(2): 185-194.

Hunt N, Derricott J, Preston A & Stillwell G (2002) *Break the cycle. Preventing initiation into injecting*. Exchange Campaigns / Department of Health. Available from the Exchange Supplies website at:

www.exchangesupplies.org/drug_information/campaigns/campaigns_intro.html.

Latka MH, Hagan H, Kapadia F, Golub ET, Bonner S, Campbell JV, Coady MH, Garfein RS, Pu M, Thomas DL, Thiel TK, Strathdee SA (2008) A randomized intervention trial to reduce the lending of used injection equipment among injection drug users infected with Hepatitis C. *American Journal of Public Health, 98(5)*: 853-861.

Latkin CA, Donnell, D Metzger D, Sherman S, Aramrattna A, Davis-Vogel A, Quan VM, Gandham S, Vongchak T, Perdue T & Celentano DD (2009) The efficacy of a network intervention to reduce HIV risk behaviors among drug users and risk partners in Chiang Mai, Thailand and Philadelphia, USA, *Social Science & Medicine, 68*: 740-748.

Marsch LA & Bickel WK (2004) Efficacy of computer-based HIV / AIDS education for injection drug users. *American Journal of Health Behavior, 28(4)*: 316-327.

National Institute on Drug Abuse (NIDA) (2000) *The NIDA community-based outreach model: A manual to reduce the risk of HIV and other blood-borne infections in drug users*. September 2000. Available at: www.drugabuse.gov/CBOM/Index.html.

Purcell DW, Garfein RS, Latka MH, Thiede H, Hudson S, Bonner S, Golub ET, Ouellet LJ, for the DUIT Study Team (2007) Development, description and acceptability of a small-group behavioural intervention to prevent HIV and hepatitis C virus infections among young adult injection drug users. *Drug and Alcohol Dependence, 91S*: S73-S80.

Tucker T, Fry CL, Lintzeris N, Baldwin S, Ritter A, Donath S & Whelan G (2004) Randomized controlled trial of a brief behavioural intervention for reducing hepatitis C virus risk practices among injecting drug users. *Addiction, 99*: 1157-1166.

Zucker DM (2008) Peer education for Hepatitis C prevention. *Gastroenterology Nursing, Jan-Feb; 32(1)*: 42-48.

9.3 General references

Australian Injecting and Illicit Drug Users League (AIVL) (2006) A framework for peer education by drug-user organisations. Available at: www.aivl.org.au/files/FrameworkforPeerEducation.pdf.

Beynon C, Taylor A, Allen E, Bellis M (in press) Visual versus written cues: a comparison of drug injectors' responses. Have surveys using the written word underestimated risk behaviours for hepatitis C?

Carruthers & Loxley (2002) Attitudes of novice heroin injectors towards non-injecting routes of administration to prevent the transmission of blood borne viruses. *International Journal of Drug Policy, 13(1)*: 69.

- Carrière GL (2008) Linking women to health and wellness: Street outreach takes a population health approach. *International Journal of Drug Policy*, 19(3): 205-210.
- Cox J, De P, Morissette C, Tremblay C, Stephenson R, Allard R, Graves L & Roy E (2008) Low perceived benefits and self-efficacy are associated with hepatitis C virus (HCV) infection-related risk among injection drug users. *Social Science & Medicine*, 66(2): 211-220.
- Davey J, Richards N, Lang CP, Davies A (2006) The threat of Hepatitis C as an influence on injecting amphetamine users' change towards non-injecting. *Journal of Child & Adolescent Substance Abuse*, 15(4): 89-104.
- De P, Roy E, Boivin JF, Cox J & Morissette C (2008) Risk of HCV transmission through drug preparation equipment: a systematic and methodological review. *Journal of viral hepatitis*, 15(4): 279-292.
- Department of Health (2007) *Reducing drug-related harm: An action plan*. Available at: www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_074850.
- Elford J, Sherr L, Bolding G, Serle F & Maguire M (2002) Peer-led HIV prevention among gay men in London: process evaluation. *AIDS Care*, June; 14(3): 351-360.
- Ellard J (2007) 'There is no profile it is just everyone': The challenge of targeting hepatitis C education and prevention messages to the diversity of current and future injecting drug users. *International Journal of Drug Policy*, 18: 225-234.
- Health Protection Scotland (HPS) and the University of the West of Scotland (2008). *The Needle Exchange Surveillance Initiative (NESI): Prevalence of HCV, HIV and injecting risk behaviours among injecting drug users attending needle exchanges in Scotland, 2007*. Glasgow: Health Protection Scotland. Available at: www.hps.scot.nhs.uk/bbvsti/publicationsdetail.aspx?id=38071.
- Information Services Division Scotland (2008). *Drug Misuse Statistics Scotland 2008*. Tables A1.29 and A1.31, available from www.drugmisuse.isdscotland.org/publications/08dmss/08dmss-000.htm.
- Information Services Division Scotland (2006). *Drug Misuse Statistics Scotland 2006*. Tables A1.34 and A1.37, available from www.drugmisuse.isdscotland.org/publications/06dmss/06dmssb.htm.
- Jones L, Pickering L, Sumnall H, McVeigh J & Bellis MA (2008) *A review of the effectiveness and cost-effectiveness of needle and syringe programmes for injecting drug users. Final full report — revised Oct 2008*. Available at: www.nice.org.uk/guidance/index.jsp?action=download&o=42477.
- Latkin CA, Hua W & Davey MA (2004) Factors associated with peer HIV prevention outreach in drug-using communities. *AIDS Education and Prevention*, 16(6): 499-508.

Needle RH, Burrows D, Friedman SR, Dorabjee J, Touze G, Badrieva L, Grund J-PC, Kumar MS, Nigro L, Manning G & Latkin C (2005) Effectiveness of community-based outreach in preventing HIV/AIDS among injecting drug users. *International Journal of Drug Policy*, 16S: S45-S57.

Newcombe R (2008) *Simple Safer Shooting* cards. Assessment of viability and usability among staff and clients of Salford Drug Service. Lifeline Publications.

O'Connell JM, Kerr T, Li K, Tyndall MW, Hogg RS, Montaner JS, Wood E (2005) Requiring help injecting independently predicts incident HIV infection among injection drug users. *Journal of Acquired Immune Deficiency Syndromes*, 40(1): 83-88.

Scott J (2008) *Safety, risks and outcomes from the use of injecting paraphernalia*. Scottish Government. Available from: www.scotland.gov.uk/Publications/2008/03/14133736/0.

Scottish Government (2008) *Hepatitis C Action Plan for Scotland: Phase II: May 2008 – March 2011*. Available at: www.scotland.gov.uk/Publications/2008/05/13103055/0.

Sherman SG, Smith L, Laney G & Strathdee SA (2002) Social influences on the transition to injection drug use among young heroin sniffers: a qualitative analysis. *International Journal of Drug Policy*, 13(2): 113-121.

Taylor A, Fleming A, Rutherford J & Goldberg D (2004) *Examining the injecting practices of injecting drug users in Scotland*. Scottish Executive Effective Interventions Unit. Available from: www.scotland.gov.uk/Publications/2004/02/18871/32890.

Taylor A (2007) Does written hepatitis C information meet the needs of injecting drug users? Presentation made to Scottish Drug Forum Conference.

Treloar C, Laybutt B, Jauncey M, van Beek I, Lodge M, Malpas G & Carruthers S (2008) Broadening discussions of “safe” in hepatitis C prevention: A close-up of swabbing in an analysis of video recordings of injecting practice. *International Journal of Drug Policy*, 19: 59-65.

Treloar C & Abelson J (2005) Information exchange among injecting drug users: A role for an expanded peer education workforce. *International Journal of Drug Policy*, 16, 46-53.

Treloar C, Laybutt B & Carruthers S (in press) Using mindfulness to develop health education strategies for blood borne virus prevention in injecting drug use. *Drugs: education, prevention and policy*.

Treloar C (2008) Blood, peers and video tape: Developing innovative blood awareness messages using analysis of video recordings of injecting in a peer education framework. *Paper presented at the 6th Australasian Viral Hepatitis Conference*, 20-22 October, Brisbane, Queensland, Australia.

Williams M, McCoy HV, Bowen A, Saunders L, Freeman R and Chen D (2001) An evaluation of a brief HIV risk reduction intervention using empirically derived drug use and sexual risk indices. *AIDS and Behavior*, 5(1): 31-43.

Witteveen E, Van Ameijden EJC & Schippers GM (2006) Motives for and against injecting drug use among young adults in Amsterdam: Qualitative findings and considerations for disease prevention. *Substance use & misuse*, 41(6/7): 1001-1016.

Wood E, Tyndall MW, Stoltz J-A, Small W, Zhang R, O'Connell J, Montaner JSG, Kerr T (2005) Safer injecting education for HIV prevention within a medically supervised safer injecting facility. *International Journal of Drug Policy*, 16: 281-284.

Appendix 1: Completed review templates

Interventions described in Chapter 4

1. Community outreach (peer intervention – 1)

Title	The NIDA community-based outreach model: A manual to reduce the risk of HIV and other blood-borne infections in drug users.
Author(s)	National Institute on Drug Abuse
Source	www.drugabuse.gov/CBOM/Index.html
Study design / methods	A manual based on the NIDA Outreach Model – based on more than 15 years of research, and incorporating the best features of three previously developed field manuals on community-based outreach HIV prevention interventions: the NIDA HIV Counseling and Education Intervention Model; the Behavioural Counseling Model for Injection Drug Users; and the Indigenous Leader Outreach Model.
Sample size for intervention	N/A
Outcomes measured	N/A

2. Peer intervention – 2

Title	A randomized intervention trial to reduce the lending of used injection equipment among injection drug users infected with hepatitis C.
Author(s)	Latka MH, Hagan H, Kapadia F, Golub ET, Bonner S, Campbell JV, Coady MH, Garfein RS, Pu M, Thomas DL, Thiel TK, Strathdee SA (2008)
Source	<i>American Journal of Public Health</i> , 98(5): 853-861.
Study design / methods	<p>Unblinded, two-armed randomized trial. Individuals were invited to take part in the study after HCV and HIV testing. Study participants were randomised either to a peer mentoring group (intervention) or a video-discussion group (control).</p> <p>Intervention: The intervention involved six sessions, two hours long, held twice weekly. All sessions were led by the same two facilitators, who followed scripted manuals.</p> <p>Control group: Control group participants watched a docudrama television series about injecting drug users and then took part in a facilitated discussion focusing on family, education, self-respect, relationships, violence, parenting and employment (nothing to do with HCV or HIV prevention). Participants who sought information about risk reduction or health care were directed to a resource table.</p>
Sample size for evaluation	418 people randomised to the intervention group (n=222) and control group (n=196)
Outcomes measured	<p>Primary outcomes: frequency of lending a used syringe to others; frequency of preparing drugs with a syringe previously used by oneself; and frequency of sharing drug preparation equipment with or before someone else.</p> <p>Secondary outcomes: (i) currently in drug treatment; (ii) refrained from lending a syringe because of HCV-positive status; and (iii) frequency of injecting oneself with a used syringe. In addition, self-efficacy was measured using a six-item scale developed for the study. Items measured the participants' professed confidence in their ability to avoid sharing syringes and paraphernalia under challenging circumstances. The four response options were: ("absolutely sure I can avoid sharing" through to "absolutely sure I cannot avoid sharing").</p> <p>All measures were taken at baseline and at 3 months and 6 months after the intervention.</p>
Comments	See also: Purcell DW <i>et al</i> (2007) Development, description and acceptability of a small-group behavioral intervention to prevent HIV and hepatitis C virus infections among young adult injection drug users. <i>Drug and Alcohol Dependence</i> , 91S: S73-S80. This earlier paper describes the process by which the above intervention was developed. See also: http://www.cdc.gov/hiv/topics/research/prs/resources/factsheets/STRIVE.htm .

2. Peer intervention – 2

Title	A peer-education intervention to reduce injection risk behaviors for HIV and hepatitis C virus infection in young injection drug users
Author(s)	Garfein RS, Golub ET, Greenberg AE, Hagan H, Hanson DL, Hudson SM, Kapadia F, Latka MH, Ouellet LJ, Purcell DW, Strathdee SA and Thiede H for the DUIT Study Team (2007)
Source	<i>AIDS</i> , 21: 1923-1932.
Study design / methods	<p>Randomised controlled trial.</p> <p>Intervention: The peer education intervention group (PEI) was taught peer education skills, focused on teaching participants how to educate their peers about HIV and HCV risk reduction.</p> <p>Control: The control group took part in a video discussion intervention (VDI) comprising equivalent hours and sessions as the experimental group. VDI participants watched hour-long films addressing social (eg, gun violence, gangs, prejudice) and health (eg, cardiopulmonary resuscitation training, alcoholism, injury prevention) issues followed by facilitated discussion using scripted questions. Risk-reduction topics were diverted by offering the same education pamphlets given to the peer intervention participants.</p> <p>HIV and HCV pre-test counselling was provided at baseline for both groups. Test results and face-to-face post-test counselling were given approximately two weeks later, before the start of the intervention trial. Those testing HIV and HCV negative at baseline were invited to participate in the trial.</p>
Sample size for intervention	n=431 (intervention) and n=423 (control)
Outcomes measured	<p>Data was collected at baseline, and at 3 and 6-month follow-ups using audio computer-assisted self-interviewing (ACASI). Outcomes included the proportion of all injections in the previous three months that involved:</p> <ul style="list-style-type: none">• injecting with a syringe used previously by another IDU• using a new sterile syringe to divide drugs with another IDU when drugs were split• sharing cookers• sharing filters• sharing rinse water <p>Responses could be 1 'never', 2 'rarely', 3 'less than half the time', 4 'about half the time', 5 'more than half the time', 6 'almost always', 7 'always'. A composite injection risk variable was created by summing the six proportion variables and dividing by six to produce a single outcome measure with values ranging from one to seven.</p> <p>Participants were also asked about sexual risk behaviours, and all participants were also tested for HCV infection at baseline, 3 months, and 6 months.</p>
Points to note	Only 56% of participants completed all six sessions. However, all participants attended at least the first session, and attendance at each of the remaining sessions was reasonably high – on average 77% of PEI participants and 78% of VDI participants attended each session.
Comments	<p>See also: Purcell DW, Garfein RS, Latka MH <i>et al</i> (2007) Development, description and acceptability of a small-group behavioral intervention to prevent HIV and hepatitis C virus infections among young adult injection drug users. <i>Drug and Alcohol Dependence</i>, 91S: S73-S80. This earlier paper describes the process by which the above intervention was developed.</p> <p>Further information is available at this website: http://www.cdc.gov/hiv/topics/research/prs/resources/factsheets/STRIVE.htm.</p>

3. Peer intervention – 3

Title	Factors associated with peer HIV prevention outreach in drug-using communities
Author(s)	Latkin CA, Hua W & Davey MA (2004)
Source	<i>AIDS Education and Prevention</i> , 16(6): 499-508.
Study design / methods	<p>Evaluation of 156 peer outreach educators six months after training. The aim was to identify individual characteristics associated with engaging in peer education activity. A randomised control trial design was used.</p> <p>Intervention: The intervention group took part in training to become peer educators.</p> <p>Control: The attention control group was neither taught peer outreach skills nor were they encouraged to engage in outreach.</p> <p>The focus of the article is on those who were trained in the intervention group.</p>
Sample size for intervention	156 participants were recruited to the intervention group.
Outcomes measured	Demographic variables and self-reported HIV serostatus were assessed at baseline. A follow-up survey was undertaken six months after training (approximately nine months after baseline). Follow-up rate was 92%. Participants were asked whether, in the prior month, they had had a conversation with anyone about HIV. If they responded “yes,” they were asked who they talked to (sex partner, family member, drug user with whom you do drugs, drug users who you don’t do drugs with, friends who don’t use drugs, acquaintances of strangers). Participants were also asked about the specific topics and frequency of this conversations.

4. Peer intervention – 4

Title	AIDS and social networks: HIV prevention through network mobilization
Author(s)	Heckathorn DD, Broadhead RS, Anthony DL & Weakliem DL (1999)
Source	<i>Sociological Focus</i> , 32(2): 159-179.
Study design / methods	<p>Experimental design comparing a social network-based “peer-driven intervention” (PDI) to the more traditional individual-focused “street-based outreach”.</p> <p>Intervention: Each IDU is motivated to recruit other IDUs for harm reduction / education services through a coupon system: for each injector recruited, who comes to the harm reduction centre bearing a coupon, the user who recruited him or her receives a monetary reward (\$10). Only modest rewards are required, because the cost involved in recruiting peers is small. Likewise, each recruit who comes to the centre bearing a coupon, is given a small number of coupons to recruit other injectors in their own drug-using network.</p> <p>Comparison group: A research interview, HIV prevention education, and the opportunity for HIV testing and counselling were offered by professionals working in the centre. Materials, such as bleach kits and condoms were also offered.</p>
Sample size for intervention	159 in the PDI group and 106 in the traditional outreach group.
Outcomes measured	<ul style="list-style-type: none">• extent of coverage (i.e., number of people in the target population reached)• injecting risk behaviours in the last 30 days (frequency of injecting; sharing of syringes, cookers, filters and rinse water)• cost of delivering the intervention.
Other comments	The article does not describe the content of the educational intervention delivered by the peer recruiters. This information was received separately from Professor Robert Broadhead.

5. Peer intervention – 5

Title	Peer-driven HIV interventions for drug injectors in Russia: First year impact results of a field experiment
Author(s)	Broadhead RS, Volkanevsky VL, Rydanova T, Ryabkova M, Borch C, Van Hulst Y, Fullerton A, Sergejev B & Heckathorn DD (2006)
Source	<i>International Journal of Drug Policy</i> , 17: 379-392.
Study design / methods	<p>Quasi-experimental design comparing a standard “peer-driven intervention” (PDI) delivered in one Russian city to a simplified PDI in another. The main difference between the two types of interventions is in the way the IDU ‘recruiters’ were rewarded for their efforts. The purpose of the evaluation was to determine whether the modification of the PDI’s reward structure affects the recruitment power and educational effectiveness of the intervention.</p> <p>In the simplified PDI, it was hypothesised that recruiters would work harder to educate their peers, because it was the only way they could earn any rewards. In the standard PDI, recruiters were rewarded separately for the number of peers they recruited, and the number they educated.</p>
Sample size for intervention	493 IDUs in Bragino and 364 in Rybinsk. The IDUs in Bragino received the standard peer-driven intervention and those in Rybinsk received the simplified PDI.
Outcomes measured	<ul style="list-style-type: none">• Injecting frequency• Cooker, filter and rinse water sharing• Syringe sharing• Unsafe sexual practices• Number of recruits from each intervention• Recruits’ educational scores• Cost of each intervention
Other comments	The article does not describe the content of either the initial or the second educational intervention delivered by the peer recruiters. This information was received separately from Professor Robert Broadhead.

6. Peer intervention – 6

Title	Reducing the risk of exposure to HCV amongst injecting drug users: Lessons from a peer intervention project in Northwest Wales
Author(s)	Noel Craine, A Mark Walker, Sian Williamson & Tim Bottomley
Source	<i>Journal of Substance Use</i> , June 2006; 11(3): 217-227.
Study design / methods	The study sought to assess the feasibility and acceptability of a peer education intervention among hard to reach groups of IDUs and provide data on the impact of the intervention on injecting risk behaviour.
Sample size for intervention	<p>13 current IDUs were trained to be peer educators. Data on self-reported risk behaviour was collected from 30 individuals at baseline, however, the follow-up sample was of insufficient size to allow any assessment of changes in risk behaviour.</p> <p>Questionnaires were administered to different groups of IDUs throughout the project. The article suggests that the IDUs who took part in these exercises were not necessarily the same for whom baseline data was collected.</p>
Outcomes measured	Data on self-reported risk behaviour was collected on IDUs by the peer educators at the project midpoint and once at the project endpoint. The main data collection instrument used was the ‘Injecting Risk Questionnaire’ – Stimson, Jones, Chalmers & Sullivan, 1998). Additional questions were included that measured awareness of BBV transmission, current treatment status and current or past drug use. In addition, data was collected on injecting group size (ie, the number of people who helped in the injection process, the number of people who were present in the same room / car when injection occurred, and the number of people present in the same house).

Interventions described in Chapter 5

1. Brief behavioural intervention

Title	Randomized controlled trial of a brief behavioural intervention for reducing hepatitis C virus risk practices among injecting drug users
Author(s)	Tucker T, Fry, CL, Lintzeris N, Baldwin S, Ritter A, Donath S & Whelan G
Source	<i>Addiction</i> , 2004, 99: 1157-1166.
Study design / methods	<p>Randomised control trial of an individually tailored brief behavioural intervention (BBI) (experiment) versus a standardised educational intervention (control).</p> <p>Intervention: The experimental intervention consisted of a 30-minute, individually tailored brief behavioural intervention delivered in a single session. The BBI was based on the Blood-Borne Virus Transmission Risk Assessment Questionnaire (BBV-TRAQ) – a standardised BBV risk assessment instrument comprising 34 questions with three subscales on injecting risk, sexual risk and other skin penetration risk.</p> <p>Control group: Control participants received standard written literature regarding HCV. Various sections in the booklet were briefly highlighted and key facts about HCV were provided. The ‘Liver First’ booklet was the main literature provided after a review of available literature by the research team. Liver First is produced by a national peer-based service user organisation (Australian Injecting & Illicit Drug Users’ League), written in a language accessible to drug users, and provides relevant information regarding HCV transmission and testing, the consequences of HCV infection and referral details for counselling and further information.</p>
Sample size	73 participants in the experimental group and 72 in the control group.
Outcomes measured	<p>The primary outcome for the study was a change in HCV risk practices in the month following the intervention, as measured by changes in the BBV-TRAQ scores.</p> <p>Secondary outcomes were measures of client satisfaction with the control and experimental interventions. At the week four research interview, using a five-point Likert scale, participants rated the intervention they had received on the following: ‘How useful was this programme to your needs?’, ‘How much did you learn from this programme?’, ‘How satisfactory did you find this programme?’ and ‘This programme would be useful to other drug users’ needs?’</p>

2. Media campaign to prevent injecting

Title	Evaluation of a media campaign aimed at preventing initiation into drug injection among street youth
Author(s)	Roy E, Denis V, Gutiérrez N, Haley N, Morissette C & Boudreau J-F (2007)
Source	<i>Drugs: education, prevention and policy</i> , 14(5): 401-414.
Study design / methods	Self-report survey (n=146) and semi-structured interviews (n=20) with young homeless people aged between 14-23, who had experienced at least one homeless episode lasting a minimum of 24 hours, who had never injected drugs and who had been on the street for no more than two years.
Sample size for intervention	Wide distribution.
Outcomes measured	The study sought to assess the campaign’s ability to reach NIDU street youth and to understand the campaign’s effects on them.

3. Intervention to prevent injecting – 1

Title	Break the cycle. Preventing initiation into injecting
Author(s)	Hunt N, Derricott J, Preston A & Stillwell G
Source	Exchange Campaigns / Department of Health, 2002. (Full text in HTML format at: http://www.exchangecampaigns.org/ktsbtcbrieftext.html) The published evaluation of the intervention is at: Hunt N, Stillwell G, Taylor C & Griffiths P (1998) Evaluation of a brief intervention to prevent initiation into injecting. <i>Drugs: Education, Prevention and Policy</i> , 5(2): 185-194.
Study design / methods	The intervention was developed through qualitative research with injecting drug users. The intervention is based on social learning theory – the idea that people can learn how to do something by seeing people modelling (doing) the behaviour, or hearing them talk about it – even if this is not intended by the person doing the modelling.
Sample size	N/A
Outcomes measured	<ul style="list-style-type: none">• Feasibility of delivering the intervention within a harm reduction service context• Frequency of injecting in front of non-injectors• Frequency of requests to initiate others• Number of people initiated by those taking part• Attitudes to initiating non-injectors into injecting.

4. Prison-based educational intervention

Title	Peer education for Hepatitis C prevention
Author(s)	Zucker DM
Source	<i>Gastroenterology Nursing</i> , 2008, 32(1): 42-48.
Study design / methods	This was a pilot test of a model of HCV prevention education. The evaluation involved a quasi-experimental approach using a one-group (ie, no comparison group), pre-test post-test prospective design. Data collection instruments were developed on the basis of Centre for Disease Control recommendations for hepatitis C prevention and relational communication theory. The instrument comprised three subscales that measured behaviour, knowledge and relationship (the prisoner's view of the teacher). It was administered prior to each educational session and at the conclusion of the last session.
Sample size for intervention	25 male prisoners enrolled in a prison treatment programme. (It is not clear from the article whether this a programme of treatment for drug misuse, or for Hepatitis C infection.) All subjects were English speakers. About half were of Hispanic-Latino or American Indian origin, a fifth were black / African, and a third were white.
Outcomes measured	Changes in self-reported behaviour, knowledge and relationship scores.
Limitations	Seven of the 25 participants withdrew from the programme prematurely. However, instead of removing those cases, missing data replacement was calculated for their post-test responses using SPSS missing value analysis. Half the participant sample was Hispanic/Latino, but none of the researchers were bilingual, nor were the data collection tools developed to account for minority cultures.
Comments	This was described as a peer intervention, however the intervention was delivered by a professional (nurse) to people in prison. The style of delivery was described as informal and friendly, but it is not clear in what sense this can be termed a "peer" intervention. The article mentioned that "the teacher instilled in the learner a responsibility to continue to disseminate HCV education to others by using their skill and knowledge in relationship with the new learner." However, there was no discussion about the extent to which the 18 prisoners who completed the programme passed on their knowledge to their peers.

5. Computer-based HIV / AIDS educational intervention

Title	Efficacy of computer-based HIV / AIDS education for injection drug users
Author(s)	Marsch LA & Bickel WK (2004)
Source	<i>American Journal of Health Behavior</i> , 28(4): 316-327.
Study design / methods	<p>Randomised trial comparing computer-delivered HIV /AIDS education to the HIV / AIDS education delivered by a therapist.</p> <p>Intervention group: IDUs took part in three to five 30-minute sessions over the course of one week. This included five modules on HIV / AIDS education.</p> <p>Comparison group: IDUs in the counsellor-based training received the standard HIV / AIDS education provided within the substance misuse treatment service where the study took place. This education was delivered in the context of several counselling sessions with a trained, master's-level substance abuse therapist and it included viewing a videotape on drugs and AIDS.</p> <p>Follow-up took place at 24-hours and 3 months after the intervention.</p>
Sample size for intervention	15 in the intervention group (computer-based education) and 15 in the comparison group (therapist-delivered education)
Outcomes measured	<ul style="list-style-type: none">• Knowledge• Participants' perceptions of their HIV educational experience• Self-reported risk behaviour.

6. Counselling intervention

Title	The effectiveness of behavioural interventions in the primary prevention of Hepatitis C amongst injecting drug users: a randomised controlled trial and lessons learned.
Author(s)	Abou-Saleh MT, Davis P, Rice P, Checinski K, Drummond C, Maxwell D, Godfrey C, John C, Corrin B, Tibbs, C, Oyefeso A, De Ruiter M, Ghodse H (2008)
Source	<i>Harm Reduction Journal</i> , 5: 25. Available publicly at: http://www.harmreductionjournal.com/content/pdf/1477-7517-5-25.pdf
Study design / methods	<p>Randomised trial with an intervention group and an attention control group. The intervention group received an enhanced prevention counselling (EPC), and the control group received simple educational counselling (SEC).</p> <p>Intervention: EPC comprised four sessions of manual-guided intervention. The four sessions were intended to be completed within eight weeks of entry into the programme. All sessions lasted between 40-60 minutes.</p> <p>Control group: SEC consisted of a 10-minute session of information-giving about the nature and the risk factors of HCV, with advice on prevention, including the need to reduce sharing of injecting equipment and safer injecting practices. This was a non-interactive session (in order to contrast with the EPC) and clients were asked to direct any questions they might have to their key worker rather than the counsellor.</p> <p>Manuals for both interventions are available from Paul.Davis@candi.nhs.uk.</p> <p>Both groups were also tested for HCV at baseline, six months and 12 months, using dried blood spot tests.</p>
Sample size for intervention	<p>Ninety-five IDUs were recruited and randomised to receive EPC (n=43) or SEC (n=52). Of the 43 people who agreed to take part in the EPC intervention, 37 attended for 6 month follow-up. However, only 17 of these had engaged with the intervention; 20 individuals did not attend even one session. A total of 33 people from the intervention group were followed up at 12 months.</p> <p>Control intervention: None of the 52 individuals who were in the SEC (control) group dropped out of the information-giving session they received, probably because this was part of their normal clinic attendance for methadone maintenance. A total of 41 control group participants were followed up at six months and 29 followed up at 12 months.</p>
Outcomes measured	<p>The primary outcome was HCV seroconversion rate at 6 months and 12 months from baseline.</p> <p>Secondary outcomes were measured by the Addiction Severity Index (ASI), Injecting Risk Questionnaire (IRQ) and Drug Injecting Confidence Questionnaire (DICQ) at baseline and 6 months after baseline. These tools measured a variety of health, behavioural and psychological indicators (including drug use, alcohol use, physical and mental health, family and social relationships, legal and financial difficulties, confidence in resisting the urge to inject, etc.).</p>
Comments	<p>cf: Davis P & Abou-Saleh MT (2008) Developing an enhanced counseling intervention for the primary prevention of Hepatitis C among injecting drug users. <i>Addictive disorders & their treatment</i>, 7(2): 65-75.</p> <p>This article describes the same study, but focuses on whether the intervention was acceptable, and whether it increased therapeutic alliance. This paper also describes the intervention in detail.</p>

7. Intervention to prevent injecting – 2

Title	One Shot
Author(s)	I van Beek and colleagues at the Kirketon Road Centre (harm reduction service), Sydney Australia.
Source	Unpublished. Information about this intervention is taken from a presentation delivered by Dr Ingrid van Beek to researchers at the National Centre in HIV Social Research at the University of New South Wales, Australia and kindly provided by Dr Carla Treloar.
Study design / methods	<p>The development of this intervention is being carried out in two phases. Phase 1 involved the development and implementation of a 1-day (3 session) intervention focused on HCV prevention and resilience building among young people at risk of transition to injecting.</p> <p>Phase 2 involved the development of a DVD and a one-day intervention which aimed to prevent current IDUs from initiating others into injecting. Qualitative research was undertaken among service users to inform the work.</p> <p>In addition, the intervention has been developed on the basis of research previously carried out by Treloar <i>et al</i> and Hunt <i>et al</i> (Break the Cycle intervention).</p>
Sample size	<p>Phase 1 was piloted among 30 participants at three sites: an independent school, a drug detoxification centre and a crisis accommodation service / refuge for adolescents.</p> <p>Phase 2 was informed by a focus group with harm reduction service clients (n=16).</p>
Outcomes measured	<p>Phase 1: improvements in knowledge about HCV.</p> <p>Phase 2: explored issues to do with people's experiences of being initiated, and initiating others, into injecting.</p>

Appendix 2: Relevant articles / reports not included in the review

1.	Author(s)	Australian Government Department of Health and Ageing (2008)
	Title	<i>Hepatitis C Resource Manual, 2nd edition</i>
	Source	http://www.health.gov.au/internet/main/publishing.nsf/Content/phd-hepc-manual-toc
	Reason not included	Does not describe an educational intervention. Chapter 8 of this manual focuses on issues to do with education and training, including education of IDUs. The manual states that, "Traditional forms of education and health promotion have not been particularly effective with people who inject drugs," and it particularly recommends peer education as an effective method of educating this group.
	Conclusions	N/A.
2.	Author(s)	Beynon CM, Taylor A, Allen E & Bellis MA (forthcoming)
	Title	Visual versus written cues: a comparison of drug injectors' responses. Have surveys using the written word underestimated risk behaviours for hepatitis C?
	Source	Submitted for publication.
	Reason not included	Does not describe an educational intervention. The study examines the different responses of IDUs about sharing injecting paraphernalia using written questions ('written cues') versus video recordings of IDUs engaged in sharing behaviours ('visual cues'). Respondents provided significantly different responses to questions about sharing when asked using visual versus written cues.
	Conclusions	Video recordings of sharing behaviour among IDUs could prove to be a useful educational tool in behavioural interventions to promote safer injecting.
3.	Author(s)	Booth RE, Kwiatkowski CF, Mukulich-Gilbertson SK, Brewster JT, Salomonsen-Sautel S, Corsi KF, Sinitsyna L (2006)
	Title	Predictors of risky needle use following interventions with injection drug users in Ukraine
	Source	<i>Drug and Alcohol Dependence, 82(Suppl 1): S49-S55.</i>
	Reason not included	Does not describe the intervention in detail. However, the article states that the intervention model was based on the Indigenous Leader Outreach Model (developed by NIDA – see NIDA, 2000), and that there were significant reductions in every risk behaviour measured following the intervention.
	Conclusions	N/A
4.	Author(s)	Bowser BP, Ryan L, Smith CD & Lockett G (2008)
	Title	Outreach-based drug treatment for sex trading women: The Cal-Pep risk-reduction demonstration project
	Source	<i>International Journal of Drug Policy, 19: 492-495.</i>
	Reason not included	Does not describe the educational aspect of the intervention. However, the article states that it included drug treatment, meals, HIV and drug use reduction education sessions, group discussions and one-on-one psychological counselling.
	Conclusions	N/A

5.	Author(s)	Carruthers S (2005)
	Title	Preventing hepatitis C: what do positive injectors do?
	Source	<i>Drug & Alcohol Review, 24(2): 193-198.</i>
	Reason not included	Does not describe an educational intervention. The study involved interviews with 111 HCV-positive injectors to gather information about current and past injecting behaviours and risk reduction options outlined in response to a series of injecting vignettes. The majority of respondents recognised the risks associated with the various injecting scenarios and could describe actions they would take to reduce those risks. However, some of these actions would not necessarily be effective as they relied on unproven methods of removing virus material from needles / syringes, or the user assumed that other injectors had knowledge equivalent to their own.
	Conclusions	May have implications for educational interventions targeted at injectors.
6.	Author(s)	Carruthers S & Loxley W (2002)
	Title	Attitudes of novice heroin injectors towards non-injecting routes of administration to prevent the transmission of blood borne viruses
	Source	<i>International Journal of Drug Policy, 13(1): 69</i>
	Reason not included	Does not describe an educational intervention. The study investigates attitudes towards and experiences with heroin use, by means other than injecting. As part of a major study of hepatitis C, injecting and HCV prevention, a group of 65 current injectors were invited to describe their experiences with heroin chasing, smoking or snorting and to discuss their attitudes towards the suggestion that using heroin by non-injecting methods could be used as a prevention strategy for HCV.
	Conclusions	The results of this study are discussed in terms of the barriers to the promotion of non-injecting drug use and methods by which such barriers might be overcome to encourage a change from heroin injection to non-injecting means of administration.
7.	Author(s)	Cox J, De P, Morissette C, Tremblay C, Stephenson R, Allard R, Graves L & Roy E (2008)
	Title	Low perceived benefits and self-efficacy are associated with hepatitis C virus (HCV) infection-related risk among injection drug users
	Source	<i>Social Science & Medicine, 66: 211-220.</i>
	Reason not included	Does not describe an educational intervention. The study examined the relationship between drug equipment sharing behaviour and hepatitis C-related knowledge and perceptions in a sample of IDUs in Montreal Canada.
	Conclusions	The authors suggest that interventions should aim to heighten awareness of the benefits of risk reduction and provide IDUs with the skills necessary to negotiate safer injecting with their peers.
8.	Author(s)	Crofts N, Louie R, Rosenthal D & Jolley D (1996)
	Title	The first hit: circumstances surrounding initiation into injecting
	Source	<i>Addiction, 91(8): 1187-1196.</i>
	Reason not included	Does not describe an educational intervention. Also date of publication prior to 2000. The study looked at the circumstances surrounding initiation into injecting among 300 young IDUs. Most identified a significant other who had initiated them, and over half had subsequently initiated others into injecting.
	Conclusions	The authors suggest that peer education programmes are likely to be the most effective harm reduction approach among new injectors.

9.	Author(s)	Davey J, Richards N, Lang CP, Davies A (2006)
	Title	The threat of Hepatitis C as an influence on injecting amphetamine users' change towards non-injecting
	Source	<i>Journal of Child & Adolescent Substance Abuse</i> , 15(4): 89-104.
	Reason not included	Does not describe an educational intervention. The study explores the influence of the hepatitis C threat on decisions to cease injecting among young amphetamine injectors in Australia.
	Conclusions	The study found a lack of knowledge about hepatitis C among young amphetamine injectors. Moreover, the threat of hepatitis C transmission was not perceived as a reason to cease injecting at any stage in the injecting career. The authors conclude that educational efforts should continue to focus on harm reduction, rather than attempting to bring about a cessation of injecting.
10.	Author(s)	Elford J, Sherr L, Bolding G, Serle F & Maguire M (2002)
	Title	Peer-led HIV prevention among gay men in London: process evaluation
	Source	<i>AIDS Care</i> , 14(3): 351-360.
	Reason not included	Describes a peer intervention – however, the target group was gay men attending gyms in central London, rather than IDUs or potential IDUs. Peer educators were recruited from people who used the gym regularly. After initial training, peer educators agreed to talk to gay men at their gym about HIV prevention, focusing on sexual risk and steroid injecting behaviour.
	Conclusions	The programme required a substantial input from the health promotion team, equivalent to one team member devoting 2.5 days / week to recruit, train and support the peer educators over 18 months.
11.	Author(s)	Ellard J (2007)
	Title	'There is no profile it is just everyone': The challenge of targeting hepatitis C education and prevention messages to the diversity of current and future injecting drug users
	Source	<i>International Journal of Drug Policy</i> , 18: 225-234.
	Reason not included	Does not describe an educational intervention. The study focuses instead on identifying factors that might contribute to the success of hepatitis C education and prevention efforts.
	Conclusions	There is a diversity of IDU populations. Information and educational messages need to be tailored to specific groups in order to be perceived as relevant.
12.	Author(s)	National Institute on Drug Abuse (NIDA) (2002)
	Title	Principles of HIV prevention in drug-using populations. A research-based guide.
	Source	www.nida.nih.gov/PDF/POHP.pdf .
	Reason not included	Does not describe an educational intervention <i>per se</i> . This guide was developed by a national expert group of leading research in the field. It provides a list of principles which should inform the development of HIV / AIDS prevention services.
	Conclusions	The guide considers that community-based outreach is an essential component of HIV / AIDS prevention and must be directed to drug users in their own neighbourhoods.

13. Author(s)	Needle RH, Burrows D, Friedman SR, Dorabjee J, Touzé G, Badrieva L, Grund J-PC, Kumar MS, Nigro L, Manning G & Latkin C (2005)
Title	Effectiveness of community-based outreach in preventing HIV / AIDS among injecting drug users
Source	<i>The International Journal of Drug Policy</i> , 16S: S45-S57.
Reason not included	This was a review of the literature on the effectiveness of community-based outreach. The review included 40 studies conducted over 20 years. Information and education are important components of community-based outreach. However, this paper does not describe the interventions used in any particular study in detail. Rather, it states that educational messages delivered through community outreach have focused on: <ul style="list-style-type: none"> • information about cleaning syringes • demonstration of skills in cleaning equipment • hierarchical risk-reduction messages / risk reduction information.
Conclusions	The authors conclude that evidence for the effectiveness of community-based outreach interventions is strong, and that community-based outreach can <ul style="list-style-type: none"> • Reach hidden populations vulnerable to HIV • Provide credible risk reduction information and the means for behaviour change.
14. Author(s)	Sherman SG, Smith L, Laney G & Strathdee SA (2002)
Title	Social influences on the transition to injection drug use among young heroin sniffers: a qualitative analysis
Source	<i>International Journal of Drug Policy</i> , 13(2): 113-121.
Reason not included	Does not describe an educational intervention. This qualitative study explored the influences on young drug users' transition from heroin sniffing to injecting.
Conclusions	The authors conclude that, to prevent the transition to injecting, it is important to intervene in the social networks of young drug users.
15. Author(s)	Taylor A (2007)
Title	Does written hepatitis C information meet the needs of injecting drug users?
Source	Presentation given at a Scottish Drugs Forum conference on <i>Drugs and Hepatitis C</i> , February 2007.
Reason not included	Does not describe an educational intervention. This study sought to assess the reading levels of injecting drug users attending needle exchange services in Glasgow, and to determine IDUs' preferences for receiving information.
Conclusions	The study found that at least one third of the 150 IDUs who took part in the study would have difficulty reading current educational literature on Hepatitis C; only about a fifth of those who had read a leaflet on Hepatitis C prevention found it helpful. IDUs' preferred method of receiving information was through verbal communication.
16. Author(s)	Treloar C & Abelson J (2005)
Title	Information exchange among injecting drug users: a role for an expanded peer education workforce
Source	<i>International Journal of Drug Policy</i> , 16, 46-53.
Reason not included	Does not describe an educational intervention. The study examines where and how young IDUs receive information about safe injecting.
Conclusions	The findings suggest a need to expand the scope and content of peer education activities by building on the culture of information exchange between IDUs.

17. Author(s)	Treloar C, Laybutt B & Carruthers S (in press)
Title	Using mindfulness to develop health education strategies for blood borne virus prevention in injecting drug use.
Source	<i>Drugs: education, prevention and policy.</i>
Reason not included	Does not describe an educational intervention. This study used video recordings of injecting episodes and interviews with participants reviewing their video recordings to explore their own injecting practices, as a new tool for prevention.
Conclusions	The use of video recordings can be a powerful education tool, given the very hidden and stigmatised nature of injecting drug use.
18. Author(s)	Treloar C, Laybutt B, Jauncey M, van Beek I, Lodge M, Malpas G & Carruthers S (2008)
Title	Broadening discussions of “safe” in hepatitis C prevention: A close-up of swabbing in an analysis of video recordings of injecting practice.
Source	<i>International Journal of Drug Policy, 19: 59-65.</i>
Reason not included	Does not describe an educational intervention. The study involved video recording injecting episodes of 13 clients of a supervised injecting centre in Sydney, Australia. Participants were interviewed the following day and asked to review their video and comment on their injecting practice. Analysis of the discussions between the interview team and the participant provides insight into the types of messages and communication strategies that have credibility with IDUs. (The researchers intend to use the results of this study to develop a model of peer education. (Treloar 2008 – paper presented at 6 th Australasian Viral Hepatitis Conference))
Conclusions	The findings show that broadening hepatitis C education discussions to include other aspects of “safer” injecting (for example, discussions about vein care) may be helpful in engaging experienced IDUs in prevention.
19. Author(s)	Williams M, McCoy HV, Bowen A, Saunders L, Freeman R and Chen D (2001)
Title	An evaluation of a brief HIV risk reduction intervention using empirically derived drug use and sexual risk indices
Source	<i>AIDS and behaviour, 5(1): 31-43.</i>
Reason not included	Does not describe the intervention. The paper argued that risk behaviour is more complex than is often represented by uni-dimensional measures of risk. The authors suggest that the reason some educational interventions have shown no effect is that their outcomes have been measured using uni-dimensional variables (ie, frequency of injecting, number of episodes of using a previously used needle, etc.). Using data collected for another study, they show that multi-dimensional measures better capture the complexity and inter-relationship of many HIV-related risk behaviours. The authors also argue that behavioural change is not easily measured in studies involving large numbers of participants with differing levels of risk behaviour prior to the intervention. Behavioural change following intervention is less substantial among individuals with low levels of risk prior to the intervention. Analysing outcomes for these individuals together with (generally a smaller number of) participants with high risk behaviour, can result in interventions failing to show an effect. However, the authors show that if intervention participants are grouped according to level of risk prior to the intervention (high risk participants grouped together and lower risk participants grouped together), behavioural changes, particularly among the high risk group, are more apparent.
Conclusions	Drug users can be triaged into risk reduction interventions that vary in intensity based on their level of needle risk. It is suggested that brief educational interventions may be effective among low needle risk drug users, but that the resources required for more intensive interventions should be targeted at those with higher levels of risk.

20. Author(s)	Witteveen E, Van Ameijden, EJC & Schippers GM (2006)
Title	Motives for and against injecting drug use among young adults in Amsterdam: Qualitative findings and considerations for disease prevention
Source	<i>Substance Use & Misuse</i> , 41(6/7): 1001-1016.
Reason not included	Does not describe an educational intervention. This is a qualitative study which explores young drug users' motives for injecting and not injecting.
Conclusions	The authors suggest that IDUs' own motives for not injecting should be promoted and their motives for initiation should be counter-balanced with factual information.
21. Author(s)	Wood E, Tyndall MW, Stoltz J-A, Small W, Zhang R, O'Connell J, Montaner JSG & Kerr T (2005)
Title	Safer injecting education for HIV prevention within a medically supervised safer injecting facility
Source	<i>International Journal of Drug Policy</i> , 16: 281-284.
Reason not included	Does not describe the educational intervention (referred to in the article as "safer injecting education"), nor does it look at the outcomes of providing safer injecting education. Rather, the study looked at the characteristics of IDUs who had received safer injecting education within a supervised injecting facility in Vancouver, Canada. The study found that those who had received the safer education were more likely than those who had not to require help with an injection in the last 6 months and to have been involved in the sex trade in the last 6 months.
Conclusions	N/A
22. Author(s)	Wood RA, Wood E, Lai C, Tyndall MW, Montaner JSG & Kerr T (2008)
Title	Nurse-delivered safer injection education among a cohort of injection drug users: Evidence from the evaluation of Vancouver's supervised injection facility
Source	<i>International Journal of Drug Policy</i> , 19: 183-188.
Reason not included	Does not describe the educational intervention (referred to in the article as "safer injecting education") in any detail. This report presents the findings of a survey of over 1000 IDUs attending a safer injecting facility in Vancouver, Canada. The safer injecting education includes: how to tie off; how to filter; and how to inject. IDUs with higher levels of injecting risk were more likely to report having requested safer injecting education.
Conclusions	N/A