

Shooting Up

Infections among injecting drug users in the United Kingdom 2006
An update: October 2007



GLOSSARY OF ABBREVIATIONS:

AIDS	Acquired Immunodeficiency Syndrome
anti-HBc	Antibodies to hepatitis B core antigen
anti-HCV	Antibodies to hepatitis C virus
anti-HIV	Antibodies to Human Immunodeficiency Virus
CA-MRSA	Community-associated meticillin resistant <i>Staphylococcus aureus</i>
Cfi	Centre for Infections
CDSC	Communicable Disease Surveillance Centre
CRDHB	Centre for Research on Drugs and Health Behaviour, London School of Hygiene & Tropical Medicine
DCR	Drug Consumption Room
DHSSPS	Department of Health, Social Services and Public Safety (Northern Ireland)
FSML	Food Safety Microbiology Laboratory
GAS	Group A Streptococcus
HIV	Human Immunodeficiency Virus
HPA	Health Protection Agency
HPS	Health Protection Scotland
HTLV	Human T-Cell Lymphotropic Virus
IDU	Injecting Drug User
ISD	Information and Statistics Division (Scotland)
MRSA	Meticillin resistant <i>Staphylococcus aureus</i>
MSSA	Meticillin sensitive <i>Staphylococcus aureus</i>
NEX	Needle Exchange
NHS	National Health Service
NPHS	National Public Health Service for Wales
NTA	National Treatment Agency for Substance Misuse
RSIL	Respiratory and Systemic Infection Laboratory
SRU	<i>Staphylococcus</i> Reference Unit
UAPMP	Unlinked Anonymous Prevalence Monitoring Programme
UK	United Kingdom

GLOSSARY OF TERMS:

AGENCY BASED NEX

A NEX service that is either a stand alone specialist agency or based in a multi-service drug agency.

COHORT STUDY

A study where a group of people are followed up over a period of time.

CURRENT IDU

An injector who had last injected during the proceeding four weeks.

DIRECT SHARING

Where an injector reports passing on or receiving needles and syringes that have already been used.

DRUG CONSUMPTION ROOM (DCR)

A facility, with health care staff usually present, where users of street drugs can consume their drugs in a safe and hygienic environment.

HOMELESS

Someone living in a hostel, having no fixed abode, or living on the streets.

MIXING CONTAINERS

A container, such as a spoon, in which drugs are prepared for injection. Sometimes referred to as 'cookers' as drugs are often heated during preparation.

PHARMACY-BASED NEX

A NEX service provided through a community pharmacy.

PREVALENCE

The proportion of a group, or population, that has been exposed to or has an infection.

RECENT INITIATE

An injector who had injected for the first time during the proceeding three calendar years.

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An update: October 2007

Health Protection Agency, Centre for Infections

Health Protection Scotland

National Public Health Service for Wales

Communicable Disease Surveillance Centre Northern Ireland

&

Centre for Research on Drugs & Health Behaviour, London School of Hygiene & Tropical Medicine

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PREFACE

This report uses data gathered by surveillance systems operated by the Health Protection Agency's Centre for Infections (CfI), Health Protection Scotland (HPS), National Public Health Service for Wales (NPHS), CDSC Northern Ireland, and other collaborating institutions. Data from research studies undertaken by these organisations in collaboration with the Centre for Research on Drugs and Health Behaviour (CRDHB) at London School of Hygiene and Tropical Medicine, the School of Social Sciences at the University of Paisley, and the Centre for Drugs Misuse Research at the University of Glasgow have also been included.

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Summary & Recommendations

Key Messages

1. Almost three-quarters of injecting drug users have ever been homeless, and those who have been homeless have higher levels of injecting risk and associated infections.
2. Injecting into the groin and the injection of crack-cocaine, which are both associated with higher levels of infection and injecting risk, have become more common.
3. Overall hepatitis C infection among injecting drug users has increased in recent years, with almost half now infected.
4. The level of HIV infection in England and Wales among injecting drug users has increased since the start of the decade to one in 75.
5. There has been a marked increase in the number of injecting drug users receiving the hepatitis B vaccine, with two-thirds now reporting vaccination.
6. Services to reduce injecting related harms and support those who want to stop injecting should continue to be developed in line with published guidance.

Key Findings

Behaviours: Levels of reported needle and syringe sharing increased in the late 1990s, and since then have remained elevated. A quarter of injecting drug users (IDUs), reported sharing in the previous month in 2006. The sharing of other injecting equipment remains even more common. There are also indications that injecting into the groin (femoral vein) is becoming more common with almost one in three IDUs reporting this in 2006. The use of crack-cocaine has become more widespread with one in three injecting this drug in 2006; this is a cause for concern as those injecting crack-cocaine report more equipment sharing.

Hepatitis C: Overall, almost half of IDUs in the UK have been infected with hepatitis C. However, there are marked variations in hepatitis C prevalence within the United Kingdom (UK), with low prevalences found in some areas. There are indications that the overall prevalence of hepatitis C infection among IDUs has probably increased in recent years and that current levels of hepatitis C transmission remain elevated.

HIV: The prevalence of HIV infection among IDUs, in England & Wales, is higher than at the start of the decade. Overall, around one in 75 IDUs now have HIV infection, which is still low compared to many other countries. The prevalence remains elevated among current IDUs in London with around one in 20 HIV-infected. Within England and Wales the HIV prevalence has increased most outside London: where the prevalence has risen from around one in 400 in 2002 to about one in 150 in 2006. In Scotland, however, prevalence has remained within one in 100 and one in 200 range since 1998.

Voluntary confidential diagnostic testing: Uptake of testing for hepatitis C among IDUs in contact with drug services has increased noticeably in recent years. It is estimated, however, that almost half of IDUs with hepatitis C in contact with these services are unaware of their infection. There are also likely to be many current and former IDUs not in contact with services that will be unaware they have hepatitis C. Whilst most IDUs in contact with services report having had a test for HIV at some point, only two-thirds of those with HIV are aware of their infection.

Vaccination: The proportion of IDUs reporting uptake of hepatitis B vaccination has increased markedly in recent years, with around two-thirds now reporting accepting at least one vaccine dose. However, the transmission of hepatitis B continues among IDUs.

Bacterial infections: Around one-third of IDUs report having had an abscess, sore or opened wound at an injecting site in the last year, indicating that injecting site infections are common. There are also continuing problems ranging from localised injection site infection through to invasive disease associated with meticillin resistant *Staphylococcus aureus* and severe group A streptococcal infection. The ongoing occurrence of wound botulism cases remains a concern.

Homelessness: Data presented in this report indicate that:

- Around three-quarters of IDUs have ever been homeless, and around half of those who had been homeless reported a period of homelessness during the last 12 months.
- One in four of those who had been homeless reported the direct sharing of needles and syringes in the past month compared with only one in six of those who had not been homeless.
- Those who had been homeless during the last year were more likely to report an abscess, open sore or wound at an injecting site.
- A higher proportion of those who had been homeless had hepatitis C infection.
- Homelessness has been associated with higher levels of hepatitis C transmission among IDUs in south Wales.
- A study in Glasgow highlighted that hostels for the homeless could be foci for high-risk injecting behaviour.

During periods of homelessness injectors are likely to find it harder to maintain hygienic injection practices as a result of having to inject in public places or having difficulty in storing injecting equipment somewhere clean. Hostels and other services for the homeless have an important role to play in reducing such harm.

Priorities for the Commissioning of Services for Drug Users

When commissioning community based services to reduce the harm associated with problem drug use, in line with the aims of the national drug strategies^{2,3,4,5,6}, primary care bodies* and Drug Action Teams or local partnerships should give priority to preventing the spread of infections among IDUs and reducing the harm that these infections cause. This should be through:

1. Continuing the development of high-quality needle-exchange (NEX) services for those unable to stop injecting (including those using drug treatment services), by:
 - a) ensuring sufficient distribution of injecting equipment to prevent the sharing of needles and syringes;
 - b) providing injecting-related equipment other than needles and syringes as appropriate to support hygienic injecting practice;
 - c) ensuring an appropriate range of NEX services are provided, including provision by drug services, retail pharmacies, and mobile or outreach services; and
 - d) providing services that are easily accessible throughout the week (including evenings, weekends, and public holidays).
2. Ensuring that all those services working with IDUs (including drug treatment services, GPs and NEX), provide:
 - a) information and practical advice on safer injecting practices, avoiding injecting site infections, prevention of blood-borne virus transmission, and the safe disposal of used equipment;
 - b) onsite hepatitis B vaccination services, with follow-up strategies for those who have started the vaccination course in line with national service specifications⁷;
 - c) easy access to health checks, treatment for injection site infections, and diagnostic tests for hepatitis C and HIV;
 - d) interventions to encourage behaviour change away from the sharing of injecting equipment and to decrease or stop injecting; and
 - e) interventions that support entry into drug treatment, particularly to sustained quality substitute opioid treatment for heroin users which has been shown to be protective against infections.

* Primary Care Trust in England, Local Health Care Co-operatives and NHS Boards in Scotland, Local Health Boards in Wales, and Health and Social Services Boards supported by Local Health and Social Care Groups in Northern Ireland.

3. Developing mechanisms, with local providers, to ensure that services that aim to prevent or reduce infections among IDUs, such as NEX, can work effectively with homeless IDUs, and can respond in a timely fashion to evolving patterns of drug use (such as increased crack-cocaine use) and risks associated with injecting practices (such as groin injecting).
4. Further improving access to diagnostic testing for hepatitis C and referral pathways for those infected for specialist assessment and treatment in line with strategies such as the Hepatitis C Action Plan for England⁸, the Hepatitis C Action Plan for Scotland⁹ and The Action Plan for the Prevention, Management and Control of Hepatitis C in Northern Ireland¹⁰.
5. Developing drug treatment services in line with the recently updated guidelines: "Drug Misuse and Dependence: Guidelines for Clinical Management"¹¹, and the recent National Institute for Health and Clinical Excellence (NICE) guidance^{12,13}.
6. Developing procedures for offering the tetanus vaccine and boosters to those IDUs who may need them and offering hepatitis A vaccination where appropriate¹⁴.
7. Supporting partnership working between services for drug users and those agencies working with the homeless to ensure appropriate delivery of services, such as, NEX, vaccinations, and drug treatment to homeless drug users.
8. Promoting a range of easily accessible drug treatment and support services that encourage drug users to reduce and cease injecting, and reduce or stop their drug use.

The planning of the provision of these, and other services for drug users, should be based on local needs assessments, which have been informed by local estimates of numbers of drug users and injectors, estimates of the prevalence of infection amongst these populations, and the particular needs of discrete groups such as homeless IDUs¹⁵. Findings from the National Treatment Agency for Substance Misuses and Health Care Commission joint review on Harm Reduction, due in the autumn of 2007, will provide information on local performance in England.

In England, the recently revised Models of Care¹⁶, which provides a framework for the provision of treatment to drug users, sets a clear structure for the provision of services across the range of providers working with drug users, and the recent introduction of the Treatment Outcome Profile¹⁷ in England will encourage regular review and monitoring of injecting behaviour through care plan reviews. The implementation of the recently launched Action Plan for Reducing Drug Related Harm in England, which includes infections as one of its foci¹⁸, is providing additional resources to support service development.

Priorities for public health surveillance development and research

In commissioning developments to public health surveillance and research studies the following need to be prioritised:

1. The Unlinked Anonymous Prevalence Monitoring Programme (UAPMP) survey of IDUs continues to provide important data and needs to be maintained as services for drug users develop. As part of Phase 1 of Scotland's Hepatitis C Action Plan⁹, the Scottish Executive has funded a comparable national survey of hepatitis C and behaviours among IDUs. This initiative will provide key data to better target and evaluate interventions aimed at reducing the spread of infection among this population group. The pilot of the enhancement to the UAPMP survey of IDUs has provided useful additional data and the continuation of such an enhancement survey should be considered.
2. It is of concern that laboratory data on acute hepatitis B is currently unavailable, and the quality of the data on hepatitis A is consistently poor. Improving the quality and consistency of the surveillance of viral hepatitis, through the more complete reporting of laboratory diagnoses with clinical and risk factor information, is needed. This should build upon the work now being undertaken, as part of the implementation of national standards for the surveillance of hepatitis B and C in the HPA¹⁹, to collate at a national level data on acute hepatitis B cases from local health protection units. Provisional data will be available from the start of 2007, however the quality and completeness of this information is uncertain, and the interpretation of trends in incidence will be difficult, given the lack of baseline data.
3. There is a need for research to examine the extent of, and risk factors associated with, bacterial infections among IDUs. In addition, there is a need to estimate the cost to UK health services of bacterial infections associated with drug injecting, and the feasibility and cost-savings associated with harm reducing interventions. Current epidemiological data on bacterial infections is focused only on the more severe cases, and there is a need for additional data on bacterial infections among IDUs.
4. NEX services are key to preventing infections among IDUs. Whilst the recent NEX Audits^{20,21}, have provided an informative insight, ongoing information on the extent of provision is needed. The National Treatment Agency for Substance Misuses is initiating a national monitoring system of throughput of injecting equipment in England, which will begin development in October 2007. This important initiative needs to be co-ordinated with existing public health surveillance of IDUs to ensure maximum impact.

5. The recent increase in infections among IDUs indicates a need to re-examine the scope and range of harm reduction services provided for IDUs. Research projects to develop, pilot and evaluate novel and improved service models, which aim to encourage and support hygienic injection practice, are needed. Research should also be undertaken to further examine the impact of unstable housing or homelessness on health risk among IDUs, the possible shift towards the use of higher risk injecting sites such as the groin (femoral vein), and the relationship between crack-cocaine use and risk.
1. Injecting drug users (IDUs) are vulnerable to a wide range of infections, including those caused by viruses such as HIV and hepatitis C and bacteria such as *Clostridium botulinum* and group A streptococci. These infections can result in high levels of illness and death, therefore public health surveillance of infectious diseases and associated risk and protective behaviours among this group are important.
2. The extent of injecting drug use in the United Kingdom (UK) remains uncertain. A recent national estimate for England suggested around 140,000 injectors of heroin or crack-cocaine (0.42% of those aged 15 to 64)²². This number is similar to a pilot back-calculation model in 2000 which suggested that there may have been between 100,000 and 150,000 current opiate using IDUs (0.5% to 0.7% of those aged 15 to 44)²³. However, other studies have suggested that the number of IDUs in England may be higher²⁴. Two studies funded by the Scottish Executive have provided estimates of the prevalence of problem drug misuse in Scotland: these indicated that the number of current injectors in Scotland may have reduced from around 25,000 in 2000^{25,26}, to 19,000 in 2003²⁷ (representing 0.9% and 0.7% of those aged 15 to 54 years, respectively). There are no recent published studies for Wales or Northern Ireland. Indicators of IDU prevalence suggest an increase over the long term²⁸. For example, the National Survey of Sexual Attitudes and Lifestyle found that the proportion of people reporting ever injecting increased from 0.8% in 1990 to 1.3% in 2000^{29,30}; and the number of opiate overdose deaths increased five-fold between 1990 and 2000³¹.
3. In 1998 the national drug strategy was launched – Tackling Drugs to Build a Better Britain³² – and this was updated in 2002². Scotland⁶, Wales⁴ and Northern Ireland⁵ have adopted country-specific strategies within the national one. The government has recently undertaken a consultation to inform the development of a revised national strategy, and the Scottish Executive is currently looking at the best way of tackling drug use with a view to a new long-term drugs strategy. There have also been a number of initiatives, such as the establishment of the National Treatment Agency for Substance Misuse (NTA) and Models of Care^{16,33}, in England, to support the development of services to meet the strategies aims.
4. This report presents available data on the extent and trends over time of infections among IDUs in the UK up to the end of 2006. It includes data on the more severe bacterial infections affecting IDUs, on available markers of HIV and viral hepatitis prevalence and incidence, and on associated risk and protective behaviours.

Risk and Protective Behaviours

5. Infections among IDUs have been associated with a wide range of behavioural and environmental factors, such as the sharing of injecting equipment and homelessness. A range of preventative interventions have been adopted, such as needle exchange (NEX), which are designed to reduce the harm associated with drug use.

England, Wales & Northern Ireland

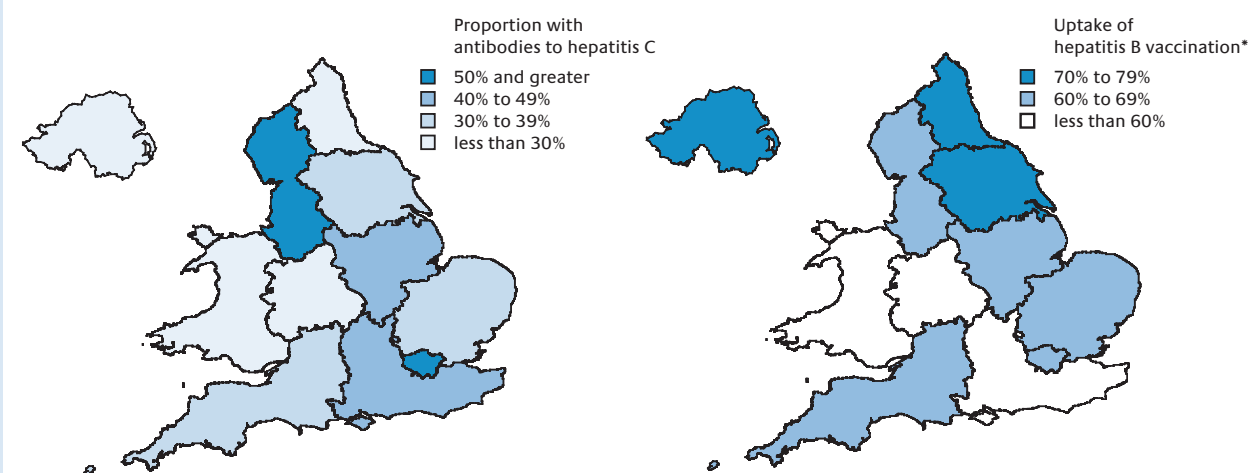
6. The sharing of needles and syringes (direct sharing) is a key route by which infections may be transmitted amongst IDUs. Those IDUs participating in the Unlinked Anonymous Prevalence Monitoring Programme's (UAPMP) survey who reported injecting in the four weeks prior to taking part in the survey (current injectors) were asked about direct sharing. In 2006 almost a quarter (23%, 445 of 1,910) reported sharing in the four weeks before taking part in the survey. Whilst this is lower than the 34% (601 of 1,775) seen in 2002, it is still higher than the level seen in the mid 1990's (Table 1). In England, direct sharing was reported by 23% (413 of 1,766) in 2006 and, when combining data for 2005 and 2006, 21% (19 of 90) reported this Northern Ireland and 22% (42 of 195) in Wales.
7. The sharing of filters, mixing containers and flushing water can also pass on infections, and participants in the UAPMP survey continued to report sharing of these items. In England, 45% (797 of 1,784) of current injectors reported sharing these items in 2006

compared to 48% in 2005. High levels of sharing were also reported in Wales (49%, 97 of 197) and in Northern Ireland (30%, 27 of 91) (2005 and 2006 data combined). The most commonly shared items in England, Wales and Northern Ireland were mixing containers such as spoons (38%, 778 of 2,070).

8. In 2006, almost all the (current and former) IDUs participating in the UAPMP survey in England reported that they had ever accessed a NEX service (90%, 2,578 of 2,851). High levels were also found in Wales (92%, 339 of 369) and in Northern Ireland (91%, 275 of 303) (2005 and 2006 data combined). Throughout England, Wales and Northern Ireland 91% (2,894 of 3,194) reported ever accessing a NEX, and amongst recent initiates (those who reported first injecting during the previous three years) it was 85% (322 of 379) (Table 1).
9. The proportion of IDUs who have taken up an offer of the hepatitis B vaccination has increased markedly over time, rising from around quarter (25%, 784 of 3,114) in 1998 to two thirds (65%, 2,061 of 3,180) in 2006 (UAPMP survey self-reported data*, Table 1). Self-reported vaccination uptake varied by region and country (combining 2005 and 2006 data, Figure 1), and in Wales was 47% (172 of 367) and in Northern Ireland 76% (230 of 304). Of those who reported vaccination, almost two thirds self-reported receiving three or more doses (61%, 1,219 of 1,989), this compares with 42% (309 of 741) in 1998. In 2006, amongst recent initiates, 61% (235 of 383) reported uptake of the vaccine, which was higher than in 2005 (46%, 179 of 388).

Figure 1:

Geographic variations in the prevalence of antibodies to hepatitis C and the uptake* of hepatitis B vaccine among current & former injecting drug users in England, Wales & Northern Ireland (2005 and 2006 data combined)



* Self reports, those receiving one or more vaccine doses.

Data source: Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug agencies.
Further regional data from this survey is available at: www.hpa.org.uk/infections/topics_az/hiv_and_sti/hiv/epidemiology/ua.htm

* Vaccination uptake data should be interpreted with caution as they are based on self-reports.

10. The drugs most commonly injected during the past four weeks by the current IDUs participating in the UAPMP survey in 2006 (n=1,981) were heroin (87%, 1,730), crack-cocaine (33%, 657), and amphetamines (15%, 303). The current IDUs who reported injecting crack-cocaine were more likely to report direct sharing in the last four weeks (26%, 170 of 645) than those who had not (22%, 275 of 1,265).
11. IDUs can inject into a range sites on their bodies, some of these sites, such as groins (femoral vein), pose a greater potential risk to health than others. Arms (57%, 1,137) were the most widely used injection site in the past four weeks among the current IDUs participating in the UAPMP survey in 2006 (n=1,981). However, a number of potentially more risky sites were also often used including: the groin (31%, 623), hands (23%, 461) and legs (17%, 338).
12. In 2006, most of the IDUs participating in the UAPMP survey reported ever having been homeless[†] (74%, 2,200 of 2,979), with 49% (1,060 of 2,153) of these having been homeless in the last year. Among recent initiates 68% (242 of 358) had ever been homeless, and 59% (140 of 236) had been homeless in the last year. Three quarters of current IDUs had ever been homeless (77%, 1,420 of 1,840), and those current IDUs who had been homeless were more likely to report direct sharing in the last month (25%, 344 of 1,374) than those who had not (16%, 65 of 400).
13. The National Public Health Service for Wales (NPHS) recruited IDUs from both community and treatment settings in South Wales in to a cohort study in 2004. They found that among those recruited at the start of the study 47% (325 of 692) reported having been homeless during the last year. At follow up, after approximately one year, 35% (100 of 286) reported having been homeless during the last year. Amongst those individuals' followed-up reported needle and syringe sharing was higher amongst those who had been homeless in the previous year; 29% of homeless individuals reported sharing in the previous year compared to 14% of housed individuals³⁴.

Scotland

14. In the financial year 2006/07[‡], drug treatment agency reports to the Scottish Drug Misuse Database (SDMD) indicated that 29%[§] of current IDUs had "used a needle or syringe that someone else had used" in the previous month. In the financial year 2005/06[‡], drug treatment agency reports to the SDMD found that 27% of current IDUs had "lent/borrowed/shared" a needle or syringe in the previous month, which compares with rates in the range of 31% to 35% during previous years 1998/99 to 2004/05 (Table 1). Given the questions on needle/syringe sharing were asked differently pre and post April 2006, the data are not directly comparable between these two periods.
15. In the financial year 2006/07[‡], drug treatment agency reports to the Scottish Drug Misuse Database (SDMD) indicated that 39%[§] of current IDUs had "used the same spoon, filter or water as someone else" in the previous month. In the financial year 2005/06[‡], drug treatment agency reports to the SDMD found that 42% of current IDUs had "lent/borrowed/shared" a spoon, filter or water in the previous month, which compares with rates in the range of 47% to 50% during previous years 2001/02 to 2004/05 (Table 1).
16. Community-wide surveys of IDUs in Glasgow found a significant increase in hepatitis B vaccine uptake among those who had injected for five years or less in 2001/02 (52% of 387) compared to 1993, 1994 and January-March 1999 (16% of 432)³⁵. Further increases in vaccine uptake were detected among IDUs, who had injected for five years or less, surveyed in Glasgow during 2004 (65% of 167) and 2005 (60% of 104).
17. A recently published study highlighted that Glasgow's hostels for the homeless were foci for high-risk injecting behaviour³⁶. Individuals interviewed during the qualitative component of the study reported witnessing prolific sharing of needles and syringes in hostels. While quantitative data demonstrated a significant association between living mostly in a hostel in the six months prior to interview and high-risk injecting behaviour, such as injecting with and passing on a previously used needle and syringe. Since this study was conducted in 2001/02, there have been a number of developments to address the needs of homeless people in Scotland, including the establishment of the Glasgow Hostels Decommissioning Programme³⁷, and the development of Standards on Health and Homelessness⁸⁰.

[†] Homeless means living in a hostel, having no fixed abode, or living on the streets.

[‡] The SDMD was revised in April 2006, such that data are now collected from clients upon commencement of a new episode of care rather than each time they attend a new agency. In 2008 data will be collected at defined points throughout a care episode: i.e. assessment, 3 months, 12 months and annually thereafter. In addition, the questions on sharing of injecting equipment were revised, as follows: SDMD (pre April 2006) asked "Have you lent/borrowed/shared needles/syringes?" and "Have you lent/borrowed/shared spoons/water/filters/solutions?"; SDMD (April 2006 - present) asked: "Have you used a needle or syringe that someone else has used?", "Have you lent someone else a needle or syringe which you have used?" and "Have you used the same spoon, filter or water as someone else?".

[§] Provisional data.

Viral Infections

18. IDUs are vulnerable to a range of viral infections through the use and sharing of contaminated injecting equipment. Some of these infections, such as hepatitis C and HIV, cause long-term chronic illnesses that have asymptomatic phases that can last many years.

Hepatitis C

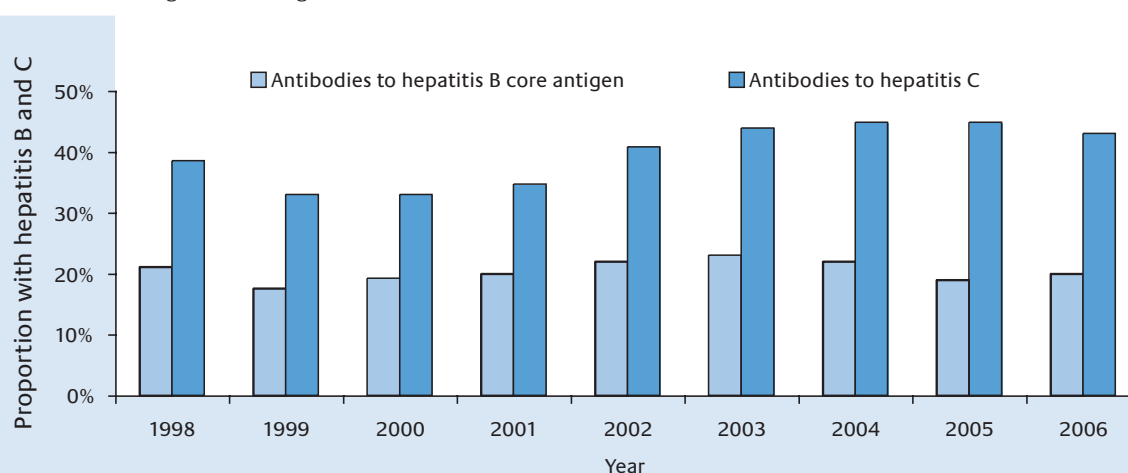
19. Hepatitis C is currently the most important infectious disease affecting those who inject drugs. Very high prevalences have been reported among IDUs in many countries. Up to 80% of those acquiring hepatitis C develop chronic infection and are at risk of developing cirrhosis and liver cancer. The development of more effective antiviral therapies means that the uptake of diagnostic testing for hepatitis C by current and former IDUs is increasingly important. At the Royal College of Physicians of Edinburgh's Consensus Conference on Hepatitis C, during April 2004, it was recommended that *"a high priority for case finding should be given to former injecting drug users, especially those over 40, who are likely to have a stage of disease which would benefit from treatment"*³⁸. Countries within the UK have developed strategies to respond to hepatitis C^{8,9,10} and much of the focus of these is on current and former IDUs.

Hepatitis C: England, Wales & Northern Ireland

20. Up to the end of 2006, laboratories in England had reported a total of 62,424 diagnoses of hepatitis C infections to the Centre for Infections (CfI) since reporting began in 1992. The majority of these infections will most probably have been acquired through injecting drug use as over 90% of those diagnoses with risk factor information gave this as the route of infection (Table 1). The number of laboratory reports each year has been increasing since the introduction of diagnostic tests in the early 1990s, from under 1,000 per annum prior to 1994 to 8,346 in 2006. Most of this rise probably reflects the increasing number of those at risk being tested, rather than an increase in transmission.
21. Laboratories in Wales have reported a total of 4,198 diagnoses of hepatitis C infection; including 428 diagnoses in 2006. Over 90% of infections in individuals with a known risk factor were associated with injecting drug use. In Northern Ireland laboratories have reported a total of 1,049 diagnoses of hepatitis C infection. In 2006 there were 140 new diagnoses reported in Northern Ireland, the highest yearly total reported, and of those reports with exposure data 100% were associated with injecting drug use.

Figure 2:

Trends in past hepatitis B and C infection among current injecting drug users* in England & Wales: 1998 to 2006



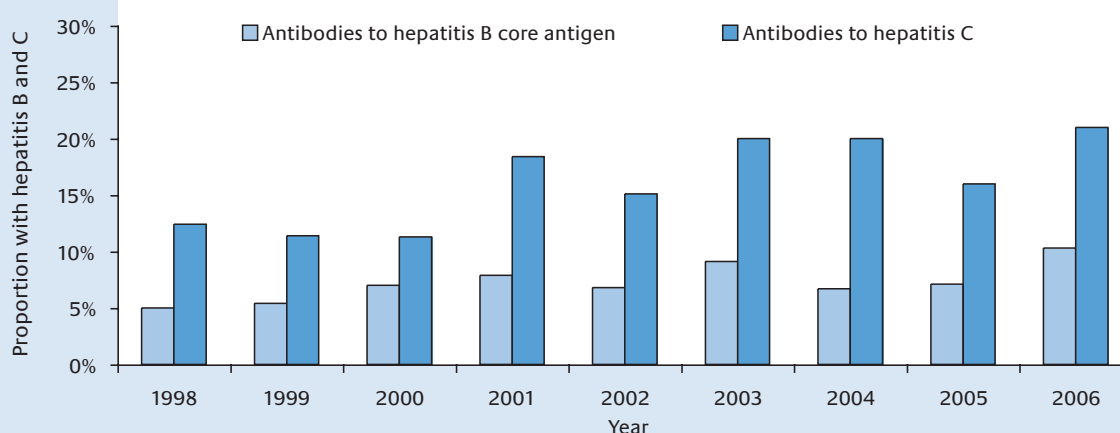
* Those who started injecting drugs during the four weeks prior to participating in the survey.

Data Source: Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug agencies.

22. The prevalence of hepatitis C infection among IDUs remains high overall. Of the (current and former) IDUs participating in the UAPMP agency survey in 2006, two fifths (41%, 1,316 of 3,240) had antibodies to hepatitis C **, which is similar to that seen in recent years (2005 42%, 1,325 of 3,175) (Table 1). The overall hepatitis C prevalence in England was 43% (1,233 of 2,893), however, there were very marked regional variations (Figure 1) from 22% (122 of 566) in the North East to 57% (690 of 1,221) in London and 60% (628 of 1,042) in the North West (data from 2005 and 2006 combined). The prevalence in Wales and Northern Ireland (Figure 1) were lower than most of the English regions: combining data from 2005 and 2006, hepatitis C prevalence in Wales was 18% (66 of 371), and in Northern Ireland it was 29% (90 of 312).
23. Those IDUs participating in the UAPMP survey who had ever been homeless were more like to have antibodies to hepatitis C (45%, 995 of 2,200) than those who had not (28%, 220 of 779).
24. Amongst current IDUs participating in the UAPMP survey the prevalence of hepatitis C has increased since the beginning of the decade, from 33% in 2000 (791 of 2,364) to 42% (838 of 1,981) in 2006 (Figure 2). In England the prevalence among current IDUs in 2006 was 44% (809 of 1,832), whilst combining data for 2005 and 2006 in Wales it was 17% (34 of 199) and in Northern Ireland, 25% (23 of 92). There were higher prevalences of hepatitis C infection among several sub-groups of current IDUs. Those who reported injecting crack-cocaine in the past four weeks were more likely to have hepatitis C (59%, 390 of 657) than those who had not (34%, 448 of 1,324). Higher prevalence was also associated with the use of some injection sites; those who had injected into their groins in the past four weeks were more likely to have hepatitis C (54%, 337 of 623) than those who had not (37%, 501 of 1,358); and those who injected into their legs were also more likely to have hepatitis C (49%, 165 of 338) than those who had not (41%, 673 of 1,643).
25. The prevalence of hepatitis C in recent initiates is a measure of recent transmission, and is one of the national outcome indicators for the *Hepatitis C Action Plan for England*⁸. In 2006, among those in this group who participated in the UAPMP agency survey from throughout England, Wales and Northern Ireland, the prevalence was 21% (81 of 388) and similar to that between 2001 and 2005. However, the prevalence among this group remains higher than it was in 2000 (11%, 89 of 787) and earlier years (Figure 3)¹¹. An increase in the level of hepatitis C transmission in the early part of this decade is supported by the findings of the cohort study undertaken in London by CRDHB that estimated the annual incidence to be 42 per 100 person-years⁵⁰.
26. The main aim of the NPHS cohort study of IDUs conducted in South Wales in 2004 was to estimate the incidence of hepatitis C among IDUs⁵¹. It recruited 700 IDUs and followed up 400 of these over approximately one year. The estimated hepatitis C incidence was 5.9 per 100 person-years, whilst the prevalence of hepatitis C among all the IDUs recruited at the start of the study

Figure 3:

Trends in past hepatitis B and C infection among recently initiated injecting drug users* in England, Wales & Northern Ireland[^]: 1998 to 2006



* Those who started injecting drugs during the three years prior to participating in the survey.

[^] Includes Northern Ireland from 2002.

Data Source: Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug agencies.

** The sensitivity of the oral fluid test used in the UAPMP agency survey is approximately 93%.

¹¹ Data on the prevalence amongst this group for England only will be given in: '*Hepatitis C in England - The third Health Protection Agency Annual Report*'. The prevalence and trend are very similar to that for England, Wales, and Northern Ireland combined.

was 26% (184 of 700). Those who reported being homeless during follow-up had a higher incidence of hepatitis C than those who did not (incidence was 13 per 100 person-years among those reporting up to 6 months homeless in the previous year and 11 per 100 person-years among those reporting 7-12 months homelessness, whilst among those housed it was 3 per 100 person-years)³⁹.

27. An increasing proportion of IDUs with hepatitis C are aware of their infection. Indicating progress with one of the aims of the *'Hepatitis C Action Plan for England'*⁸ which is to increase the proportion of IDUs with hepatitis C aware of their infection. Most IDUs who took part in the UAPMP agency survey in England now report having accepted the offer of a test, with only 24% of IDUs (695 of 2,893) reporting never having had a voluntary confidential test for hepatitis C in 2006, compared with 51% (1,532 of 2,998) in 2000. Of those IDUs in England who were infected with hepatitis C, 46% (493 of 1,081) in 2006 were unaware of their infection, compared to 60% (615 of 1,018) in 2000. Of participants from Wales 45% (158 of 355) reported never having a voluntary confidential test for hepatitis C in 2005/06, with over half (32 of 60) of those with hepatitis C being unaware of their infection. Less than one in ten (8.6%, 25 of 292) of the participants from Northern Ireland in 2005/06 reported not having been tested for hepatitis C, and just over one quarter (23 of 80) of the participating IDUs with hepatitis C in the province were unaware of their hepatitis C infection.

Hepatitis C: Scotland

28. During 2005, it was estimated that approximately 50,000 people were infected with hepatitis C in Scotland (representing 1% of the population)⁴⁰. Of these 50,000, it was estimated that 37,500 (75%) were chronically infected (including 33,800 individuals who had ever injected drugs) and that between 35% and 40% of these had their infection diagnosed⁴⁰.
29. Of the 33,800 ever IDUs living with chronic hepatitis C in Scotland during 2005, it was estimated that 22,900, 9,050 and 1,850 had mild, moderate and severe (cirrhosis) hepatitis C disease, respectively⁴¹. Assuming the continuation of current rates of hepatitis C transmission and uptake of antiviral therapy, it is predicted that in the year 2020, 19,000, 18,000 and 3,000 ever IDUs will have mild, moderate and severe hepatitis C disease, respectively⁴¹.

30. To the end of 2006, a total of 22,073 persons had been diagnosed hepatitis C positive in Scotland. In 2006, 1,520 new diagnoses were reported; this compares with an annual average of 1,682 reports during the period 2001 to 2005 (Table 1). Among the 14,755 reports for which risk information was available, 13,144 (89%) were known to have ever injected drugs.

31. In Scotland, residual sera from specimens provided by IDUs, originally tested for HIV, are anonymously tested for hepatitis C so as to monitor trends in hepatitis C prevalence among this group⁴². Table 1 shows that the prevalence of hepatitis C among IDUs in Glasgow reduced substantially between 1990 (all IDUs: 89%; IDUs aged under 25 years: 91%) and 1999/2000 (62%; and 41% respectively), suggesting that there had been a decrease in hepatitis C incidence during the 1990s. Since then, the prevalence of hepatitis C among IDUs in Glasgow has remained broadly unchanged (rising only slightly in 2002/03, all IDUs: 64%; IDUs aged under 25 years: 43%).
32. A review of epidemiological studies showed that the incidence of hepatitis C among IDUs in many parts of Scotland remains high (in the range 12 to 29 per 100 person-years)⁴³.
33. During 2005, a survey of 435 current IDUs recruited at needles exchanges in Glasgow estimated the sero-prevalence of hepatitis C was 68%. This compares to a prevalence of 77% among 531 current IDUs recruited during a community-wide survey in Glasgow in 2004⁴⁴. Among 34 IDUs surveyed in 2005 who had commenced injecting in the previous two years, the prevalence of hepatitis C was 30%; this prevalence was lower than that detected among equivalent IDUs surveyed in 2001/2002 (43% of 120) and 2004 (50% of 52).
34. A recent study modelled the transmission of hepatitis C through the sharing of used needles/syringes among IDUs in Glasgow. This combined available information on: the incidence and cessation of injecting drug use; the frequencies with which IDUs injected and shared needles/syringes; and the susceptibility, transmissibility and carriage of hepatitis C infection. Scenario analyses indicated that as many as 4,500 hepatitis C infections had potentially been prevented in Glasgow during 1988-2000 as a result of harm-reduction measures⁴⁵.

Hepatitis B

35. In the UK, hepatitis B infection is usually acquired in adulthood, with sexual activity or injecting drug use being the most commonly reported routes of infection. Infection with the hepatitis B virus typically causes an acute infection, with a small number of those infected going on to develop chronic disease. Infection with hepatitis B is however preventable using a safe and effective vaccine.
36. In England and Wales, acute hepatitis B cases are reported to the Cfl. There was a substantial deterioration in the quality of hepatitis B reporting in 2004 and data for 2004 to 2006 are unavailable[†]. However, in 2003 injecting drug use was the main risk associated with hepatitis B infection, accounting for 34% of individuals with a known risk factor in England, and 27% in Wales.
37. In Scotland and Northern Ireland, reported hepatitis B diagnoses encompass both acute and chronic infections. In Scotland, there were 375 reports in 2006; this compares to an average annual total of 354 for the period 2000 to 2005. The proportion of case reports indicating injecting drug use as the main risk declined from 30% in 1999 – the year in which an outbreak occurred among the IDU population in Aberdeen – to 3% in 2006 (Table 1). In Northern Ireland the total number of reports (acute and chronic) of hepatitis B infection prior to 2002 had fluctuated at around 30 reports each year. There were 67 reports in 2002, 61 in 2003, 60 in 2004, 72 in 2005 and in 2006 there were 78 reports. Some of these infections will have been related to injecting drug use.
38. Overall about one in five IDUs have had hepatitis B infection. In 2006, 21% (677 of 3,240) of the current and former IDUs who took part in the UAPMP survey in England, Wales & Northern Ireland had antibodies to hepatitis B core antigen (anti-HBc, a marker of previous or current hepatitis B infection^{§§}; this was similar to the level seen since 1995 (Table 1). The prevalence varied by country (combining 2005 and 2006 data), in Wales the prevalence was 11% (42 of 371) and Northern Ireland 8.0% (25 of 312). Those IDUs who reported having ever been homeless were more likely to have anti-HBc (23%, 495 of 2,200) than those who had not (17%, 130 of 779).
39. The transmission of hepatitis B continues, and may have increased since the middle of the 1990s, even though there is an effective vaccine. The prevalence of anti-HBc among recent initiates is an indicator of recent transmission. The UAPMP survey found that prevalence among this group increased from 3.4% (20 of 583) in

1997 to 9.1% (35 of 386) in 2003, it was 6.7% (23 of 345) in 2004, 7.1% (28 of 397) in 2005 and 10% (40 of 388) in 2006 (Figure 3).

40. The recent cohort study that followed up current 400 IDUs recruited from South Wales in 2004 estimated the annual incidence of anti-HBc to be 2.1%[§]. The prevalence of anti-HBc among all the IDUs recruited at the start of this study was 9.3% (65/700).

Hepatitis A

41. Up to the end of the 1990s, hepatitis A infection in the UK occurred most frequently in men who have sex with men and people who visit endemic countries. There is an effective vaccine that is offered to those at risk¹⁴. There appears to have been a change in the epidemiology of hepatitis A in the early part of the current decade with significant numbers of infections occurring in IDUs who may have acquired hepatitis A infection through person-to-person contact either through poor hygiene, via blood through sharing contaminated injected equipment, through sexual activities that increase the risk of oro-faecal contamination, or from drugs contaminated with faeces during smuggling.
42. In 2006, the total number of laboratory reports of hepatitis A infection in England and Wales was 396 (all routes of infection). This continues the recent downward trend in the overall number of hepatitis A cases reported annually since 2002. There were 460 laboratory reports of hepatitis A in 2005, 671 in 2004, 1,028 in 2003 and 1,357 in 2002. This downward trend continues to be most notable in men aged between 15 to 44 years. Over the years, there has been an increasing proportion of hepatitis A reports containing no information on risk factors. This is reflected in the fact that in 2005 and 2006, only 0.9% and 0.8% of reports respectively had information on a recent history of travelling abroad being associated with hepatitis A acquisition. In the early part of the decade there had been a number of outbreaks of hepatitis A that were associated with injecting drug use and homelessness. Data since 2002 suggest that the outbreaks of hepatitis A in IDUs⁴⁶ have been waning.
43. An outbreak of hepatitis A infection among IDUs in Scotland occurred in Aberdeen during 2000 and 2001, and involved 74 IDUs. A case-control study revealed that poor hygiene, related to individuals preparing and injecting drugs together, had provided an opportunity for transmission⁴⁷. During June to December 2003, there was an increase in the number of notifications of hepatitis A in Ayrshire, Scotland; 13 cases among IDUs were reported⁴⁸.

[†] Publication of hepatitis B surveillance data has stopped until the current problems with the routine laboratory surveillance system, some of which are currently being addressed, have been resolved. Whilst the quality of the data has been maintained in parts of the system publishing partial figures could give the false impression that cases of acute hepatitis B in England and Wales have fallen. The HPA has recently developed surveillance standards for hepatitis B surveillance¹⁹.

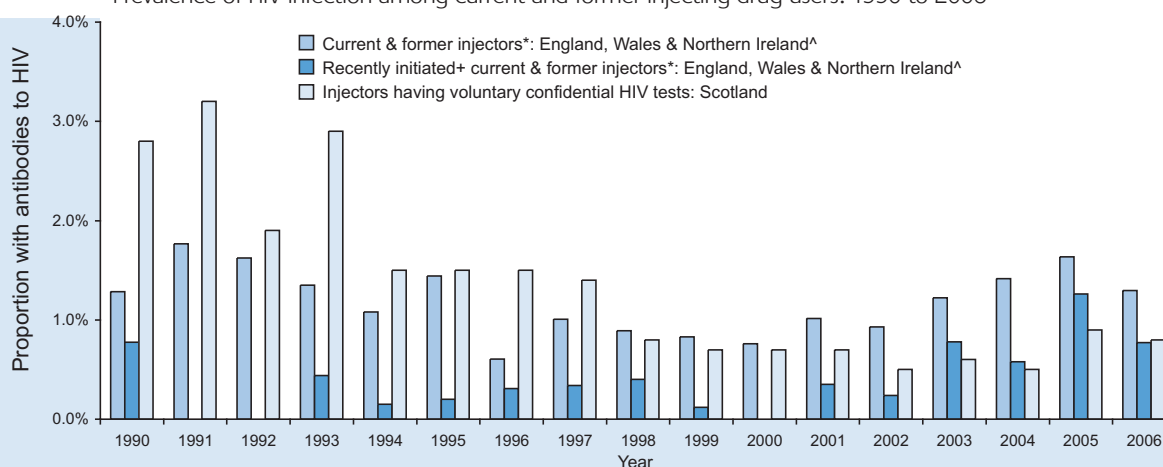
^{§§} The sensitivity of the oral fluid test used in the UAPMP agency survey is approximately 75%.

HIV

44. Transmission of HIV through injecting drug use was recognised early in the HIV epidemic at the beginning of the 1980s. Explosive outbreaks of HIV infection among IDUs have occurred worldwide, with ongoing transmission in Eastern Europe. Other than an outbreak in Edinburgh in the early 1980s, HIV infection among IDUs has remained relatively uncommon in the UK, probably as a result of prompt community and public health responses.
45. By the end of 2006 there had been a cumulative total of 4,662 HIV diagnoses reported^{***} in the UK where infection was thought to have been acquired through injecting drug use. These accounted for 5.4% of all HIV diagnoses to the end of 2006 (86,577) in the UK, 4.2% (3,325 of 80,001) of those in England, 26% (1,278 of 4,824) in Scotland^{†††}, 3.8% (49 of 1,276) in Wales, and 2.1% (10 of 476) in Northern Ireland.
46. The annual number of HIV diagnoses among IDUs in recent years has been low and relatively stable (table 1), at an annual average of 140 reports during the period 1998 to 2006. So far, 156 HIV diagnoses, where infection was thought to have been acquired through injecting drug use, have been reported in the UK for 2006 (72 in London, 16 in Scotland, and 68 elsewhere). Of the 156 new diagnoses in 2006, probable country of infection was reported for 67% (104). Where reported, 52% (54) of infections were probably acquired within the UK and 48% (50) outside of the UK, mostly in Southern Europe. In comparison, in 2004 49% (45 of 91) of infections were probably acquired in the UK, whilst in 2005 the figure was 56% (67 of 120). In 2006, country of birth was reported for 63% (98) of the diagnoses, 45% (44) were born within the UK and 55% (54) outside of the UK, mostly in Southern Europe. In 2005 the proportion born within the UK was 44% (44 of 100).
47. In 2006, 1,038 HIV-infected IDUs were seen for HIV-related treatment or care in England, Wales & Northern Ireland, a 19% increase since 2000 when 870 IDUs were seen for care. IDUs accounted for 4.1% (870 of 21,429) and 2.1% (1,038 of 49,637) of all HIV-infected individuals seen for care in 2000 and 2006 respectively. In 2006, 71% (733 of 1,038) IDUs were male and 88% (907 of 1,028) were white. One quarter of IDUs seen for HIV-related care in 2006 had at some time been diagnosed with an AIDS-defining illness (260 of 1,021). Whilst 30% (298 of 1,007) of IDUs were not receiving antiretroviral therapy in 2006, 51% (517) were on a combination of three drugs and 16% (162) were receiving four or more drugs (only 30 individuals were receiving mono or dual drug combinations). Of the IDUs seen for HIV-related care in 2006 around one fifth (17%, 155 of 915) had latest CD4 counts of 200 cells per mm³ or less^{†††}. The proportion of IDUs first seen for care in 2006 who had latest CD4 counts of 200 cells per mm³

Figure 4:

Prevalence of HIV infection among current and former injecting drug users: 1990 to 2006



^ Includes Northern Ireland from 2002.

Those who started injecting drugs during the three years prior to participating in the survey.

* Data from Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug agencies.

*** Based on reports received at the Centre for Infections by the end of June 2007.

††† The high overall proportion of IDUs among the diagnosed HIV infections in Scotland reflects individuals who were infected and diagnosed early in the epidemic. Since 2002 IDUs have account for around only one in twenty of new HIV diagnoses in Scotland.

††† Individuals with CD4 cell counts of 200 cells per mm³ or less have an increased risk of morbidity and mortality relative to individuals with higher counts. Individuals diagnosed with low CD4 counts have a poorer response to therapy and will have missed opportunities to prevent onward transmission through clinical and behavioural preventive measures.

or less was 25% (27 of 106) compared to 27% (20 of 74) in 2000. In Scotland, 387 HIV-infected IDUs were seen for HIV-related treatment or care in 2006, an 11% decrease since 2000 when 436 IDUs were seen for care. IDUs accounted for 33% (436 of 1,310) and 16% (387 of 2,410) of all HIV-infected individuals seen for care in 2000 and 2006 respectively. In 2006, 67% (258 of 436) IDUs were male and 96% (372 of 387) were white, 16% of IDUs seen for HIV-related care in 2006 had at some time been diagnosed with an AIDS-defining illness (63 of 387). Whilst 21% (80 of 387) of IDUs were not receiving antiretroviral therapy in 2006, 61% (236) were on a combination of three drugs and 15% (58) were receiving four or more drugs (only 9 individuals were receiving mono or dual drug combinations). Of the IDUs seen for HIV-related care in 2006 around one third (34%, 132 of 387) had latest CD4 counts of 200 cells per mm³ or less. The proportion of IDUs first seen for care in 2006 who had latest CD4 counts of 200 cells per mm³ or less was 25% (6 of 24) compared to 40% (8 of 20) in 2000.

48. The overall prevalence of HIV seen among IDUs in 2006 was similar to that seen in recent years, and remains higher than that seen in the late 1990s. The UAPMP survey of current and former IDUs in England, Wales & Northern Ireland indicates an overall HIV prevalence of 1.3% (42 of 3,240) in 2006 (Figure 4). In London, the prevalence was 4.0% (24 of 593), whilst elsewhere in England it was 0.65% (15 of 2,300). Combining data for 2005 and 2006 the prevalence of HIV infection among IDUs in the UAPMP agency survey in Northern Ireland was 1.9% (6 of 312) and in Wales was 1.1% (4 of 371). Those IDUs who reported that they had ever been homeless had a similar prevalence of HIV (1.3%, 28 of 2,200) to those who had not (1.2%, 9 of 779).
49. The raised HIV prevalence seen among current IDUs in England and Wales in recent years has continued⁴⁹. The overall prevalence amongst current IDUs in the UAPMP survey in England and Wales in 2006 was 1.3% (25 of 1,938). Whilst the HIV prevalence amongst current IDUs in London has changed little in recent years (5.0%, 14 of 278 in 2006), elsewhere in England and Wales it has been elevated since 2004. The prevalence among current IDUs in England and Wales outside London in 2006 was 0.66% (11 of 1,660), which is lower than that seen in 2005 (1.6%, 24 of 1,510) but the same as that found in 2004 (0.66%, 8 of 1,213). The HIV prevalence outside London in 2003 was 0.25% (3 of 1,206) having changed little since the mid-1990's.
50. The prevalence of HIV among recent initiates, a measure of recent transmission, indicated raised levels of HIV transmission among IDUs in recent years (Figure 4). The prevalence among the recent initiates

participating in the UAPMP survey has remained higher than it was prior to 2003, with the prevalence being 0.77% (3 of 388) in 2006 (in 2002 it was 0.25%, 1 of 400). Corroboration for this comes from the community recruited cohort study of recently initiated IDUs in London undertaken by the CRDHB in 2001/03. This estimated that HIV incidence was 3.4% per annum overall and provided evidence that the incidence of HIV was higher among those who reported injecting crack-cocaine (around 6%). However, in the recent cohort study of IDUs in South Wales undertaken by NPHS found that all of the 400 IDUs who were followed up after approximately one year were negative for antibodies to HIV⁵¹.

51. In 2006, 30% of IDUs (979 of 3,240) who took part in the UAPMP agency survey reported never having had a voluntary confidential test for HIV. Of those who had antibodies to HIV, 64% (25 of 39) were aware of their infection in 2006, which was higher than in 2005 (47%, 22 of 47).
52. In Scotland, the prevalence of HIV among IDUs is monitored through the surveillance of people undergoing voluntary confidential HIV testing. This found a HIV prevalence of 0.79% (17 of 2,142) among IDUs undergoing testing in Scotland during 2006; this compares with prevalences of 1.4% to 3.2% in the early to mid-1990s and 0.5% to 0.9% during the period 1998 to 2005 (Table 1).

HTLV-II (Human T-Cell Lymphotropic Virus, type II)

53. HTLV-II is endemic among native Amerindian tribes⁵², and in Europe it has been documented among IDUs⁵³. HTLV-II infection has been associated with neurological disorders,⁵⁴ an increased risk of bacterial infections, and in those co-infected with HIV an increased risk of neuropathy⁵⁵.
54. Between 2002 and 2006 454 individuals were newly diagnosed with HTLV and reported to CfI, of whom 22 were known to be HTLV-II infected and 10 were HTLV-I&II co-infected⁵⁶. Of the 22 individuals diagnosed with HTLV-II infection the probable route of infection was reported for 8 individuals: 2 were infected through injecting drug use, 2 were infected through heterosexual intercourse with an IDU partner, 2 were infected through heterosexual intercourse with no information on the partner, 1 was infected through transfused blood, and 1 was infected by mother to child transmission and heterosexual intercourse. Where reported (12), 10 were born in the UK, 1 in Europe and 1 in Africa. Eleven individuals were tested as blood donors. As there is no routine testing for the infection among IDUs, HTLV-II infection among this group is likely to be under-diagnosed.

Table 1

Summary of indicators of viral hepatitis and HIV transmission among Injecting Drug Users in the United Kingdom

Indicator	Area	Sub-Category	
Hepatitis C infection			
Reported laboratory diagnoses of hepatitis C infection	England	Total number of reports: all exposures	n
		Proportion of all reports, with exposure data, indicating injecting drug use [#]	%
	Wales	Total number of reports: all exposures	n
		Proportion of all reports, with exposure data, indicating injecting drug use [#]	%
	Scotland	Total number of reports: all exposures	n
		Proportion of all reports, with exposure data, indicating injecting drug use [#]	%
	Northern Ireland	Total number of reports: all exposures	n
		Proportion of all reports, with exposure data, indicating injecting drug use [#]	%
Proportion hepatitis C antibody positive ^{~‡}	England, Wales & Northern Ireland [^]	Current & former injectors	%
Prevalence among those having voluntary confidential HIV tests	Glasgow	First injected during the last 3 years	%
		Injectors: all ages	%
		Injectors: age under 25 years	%
Hepatitis B infection			
Reported laboratory diagnoses of hepatitis B infection	England	Total number of reports: all exposures	n
		Proportion of all reports, with exposure data, indicating injecting drug use [#]	%
	Wales	Total number of reports: all exposures	n
		Proportion of all reports, with exposure data, indicating injecting drug use [#]	%
	Scotland**	Total number of reports: all exposures	n
		Proportion of all reports, with exposure data, indicating injecting drug use [#]	%
	Northern Ireland***	Total number of reports: all exposures	n
		Proportion of all reports, with exposure data, indicating injecting drug use [#]	%
Proportion hepatitis B antibody positive ^{~‡}	England, Wales & Northern Ireland [^]	Current & former injectors	%
		First injected during the last 3 years	%
HIV infection			
Reports of new diagnoses of HIV infection through injecting drug use	London	Total number of reports: injecting drug use	n
	Scotland	Total number of reports: injecting drug use	n
	Rest of UK	Total number of reports: injecting drug use	n
	UK	Total number of reports: men who have sex with men & injecting drug use	n
Prevalence among those having voluntary confidential HIV tests	Scotland	All injectors tested	%
Proportion HIV antibody positive [~]	England, Wales & Northern Ireland [^]	Current and former injectors	%
		First injected during the last 3 years	%
Behaviour			
Passing on or receiving used needles or syringes in the last month – self reports [~]	England, Wales & Northern Ireland [^]	Current injectors	%
		Current injectors aged ≤24	%
		Current injectors who first injected during the last 3 years	%
Sharing of needles and syringes in past month – agency reports [¶]	Scotland	Current injectors	%
Sharing of any injecting equipment in past month – self reports [~]	England, Wales & Northern Ireland [^]	Current injectors	%
Markers of health care utilization			
Ever used a needle exchange [~]	England, Wales & Northern Ireland [^]	Current injectors who first injected during the last 3 years	%
Ever had a voluntary confidential test for hepatitis C [~]	England, Wales & Northern Ireland [^]	Current & former injectors	%
Hepatitis B vaccine coverage – self reported [~]	England, Wales & Northern Ireland [^]	First injected during the last 3 years	%
		Current & former injectors	%
Proportion of those <i>unaware</i> that they have hepatitis C infection – self reported [~]	England, Wales & Northern Ireland [^]	Current & former injectors anti-HCV positive	%
Proportion of those <i>unaware</i> that they have HIV infection – self reported [~]	England, Wales & Northern Ireland [^]	Current & former injectors anti-HIV positive	%

* Provisional, reports are subject to reporting delay.

* Data on exposure is often incomplete or missing.

[^] Includes Northern Ireland from 2002.[~] Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug services.

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
-	-	228	410	796	1,463	2,116	2,652	4,101	5,296	4,892	4,665	5,547	6,187	7,993	7,578	8,346*
-	-	53	66	76	80	85	92	90	91	92	96	97	95	95	97	96
-	-	13	25	43	183	411	386	378	429	341	292	351	322	247	349	428*
-	-	13	100	100	88	84	97	93	96	97	96	99	100	100	100	100
36	276	375	528	841	1,142	1,238	1,529	1,999	1,954	1,890	1,682	1,791	1,629	1,626	1,600	1,520
50	31	57	84	88	86	91	91	94	94	94	94	92	92	92	90	86
1	13	48	7	43	63	55	54	65	46	54	65	75	84	102	134	140
0	9	3	50	27	43	53	64	68	78	82	75	89	86	100	93	100
-	-	-	-	-	-	-	-	41	35	35	36	39	42	41	42	41
-	-	-	-	-	-	-	-	12	11	11	18	15	20	20	16	21
89	-	-	-	-	77	80	68	-	62	-	-	64	-	-	-	-
91	-	-	-	-	59	61	43	-	41	-	-	42	-	-	-	-
599	555	512	605	603	584	525	621	806	712	704	554	829	676	-	-	-
26	21	20	25	26	39	41	48	45	51	46	37	37	38	-	-	-
19	17	19	24	30	28	45	31	37	38	24	44	55	25	-	-	-
13	11	30	13	32	55	64	53	71	54	35	39	69	27	-	-	-
249	200	120	186	166	152	184	215	295	386	360	357	354	342	341	372	375
22	25	18	9	10	9	10	11	20	30	25	19	11	6	6	6	3
37	28	34	22	33	30	31	22	18	24	42	37	67	61	60	72	78
33	31	35	34	29	22	22	18	22	20	21	21	22	22	21	19	21
21	7	16	13	10	5	7	3	5	5	7	8	7	9	7	7	10
112	121	108	91	77	102	82	77	58	54	51	52	67	77	64	59	72*
38	51	27	53	30	22	34	31	19	17	16	18	11	13	12	23	16*
61	72	54	60	60	62	61	63	59	46	47	65	48	77	62	87	68*
240	289	231	238	212	221	227	194	165	139	148	153	153	188	153	186	167*
2.8	3.2	1.9	2.9	1.5	1.5	1.5	1.4	0.8	0.7	0.7	0.7	0.5	0.6	0.5	0.9	0.8
1.3	1.8	1.6	1.3	1.1	1.4	0.6	1.0	0.9	0.8	0.8	1.0	1.0	1.2	1.4	1.6	1.3
0.8	0.0	0.0	0.4	0.1	0.2	0.3	0.3	0.4	0.1	0.0	0.4	0.3	0.8	0.6	1.3	0.8
-	24	20	18	17	17	18	17	32	33	31	33	34	29	28	28	23
-	35	27	25	25	26	24	25	38	40	31	36	43	37	36	38	29
-	26	22	23	21	22	21	22	31	31	24	28	33	28	27	28	21
-	-	-	-	-	-	28	28	34	34	34	35	33	34	31	27	-
-	-	-	-	-	-	58	55	63	63	60	59	60	55	55	53	48
-	-	-	-	-	-	-	-	-	-	84	86	83	86	85	84	85
-	-	-	-	-	-	-	-	-	-	49	54	58	63	67	71	75
-	-	-	-	-	-	-	-	14	17	26	28	36	42	51	46	61
-	-	-	-	-	-	-	-	25	29	35	37	43	50	56	59	65
-	-	-	-	-	-	-	-	-	-	60	59	58	53	49	48	45
-	-	-	-	-	13	29	38	32	16	18	40	21	31	49	53	36

‡ Denotes past or current infection with hepatitis B/C.

* Scottish drug misuse database: data are for financial years, for example, 2002 data relates to 2002/03 financial year. The data collection process for the Scottish Drug Misuse Database (SDMD) was revised in April 2006 and is not directly comparable.

** Scottish data can not distinguish between acute and chronic hepatitis B infection.

Shooting Up

An update: October 2007

Bacterial infections

55. IDUs are vulnerable to a range of bacterial infections, such as wound botulism, 'gas gangrene', and bacteraemia, as a result of non-sterile injecting or injecting contaminated drugs. In recent years these acute infections have caused growing public health problems.

Staphylococcus aureus Infections

56. *Staphylococcus aureus* is a common pathogen among IDUs, causing infections that vary in severity from minor skin and soft tissue infections to life-threatening invasive disease such as bacteraemia and endocarditis. Typically, isolates from these individuals are methicillin sensitive *S. aureus* (MSSA), but little is known about the extent or epidemiology of MSSA among the IDUs in the UK. More recently, methicillin resistant *S. aureus* (MRSA) has been reported in IDUs in Switzerland and the United States of America.

57. A number of laboratories in England and Wales have reported encountering MRSA as a cause of injecting drug use related sepsis in the community^{57,58}. The Health Protection Agency's (HPA) Staphylococcus Reference Laboratory (SRL) has received sporadic and small clusters of isolates for testing. Between April 2003 and March 2007 a total of 60 cases of injecting drug use related sepsis due to MRSA have been identified from geographically distinct areas throughout England and Wales. There were 46 males and 14 females; 30 presented with injection site abscesses or skin infection,

21 with bacteraemia, 4 with endocarditis and 1 with pneumonia (clinical data were not available for 4). Cases are continuing to be reported.

58. Detailed analysis of the MRSA isolates has revealed that they represent a community-associated MRSA (CA-MRSA) clone that displays a number of characteristic markers⁵⁹. This clone is distinct from the healthcare-associated MRSA in the UK (EMRSA-15 and EMRSA-16). In accordance with international nomenclature, this clone is known as ST1-MRSA-IV and is one of the most common CA-MRSA strains currently seen in England and Wales⁵⁹ and has been reported previously in Australia⁶⁰. It is important to note that this strain does not produce the Panton-Valentine Leukocidin (PVL) toxin that has been associated with serious, life-threatening disease. Nevertheless, as with PVL-positive CA-MRSA strains, this clone can cause skin and soft tissue infection.

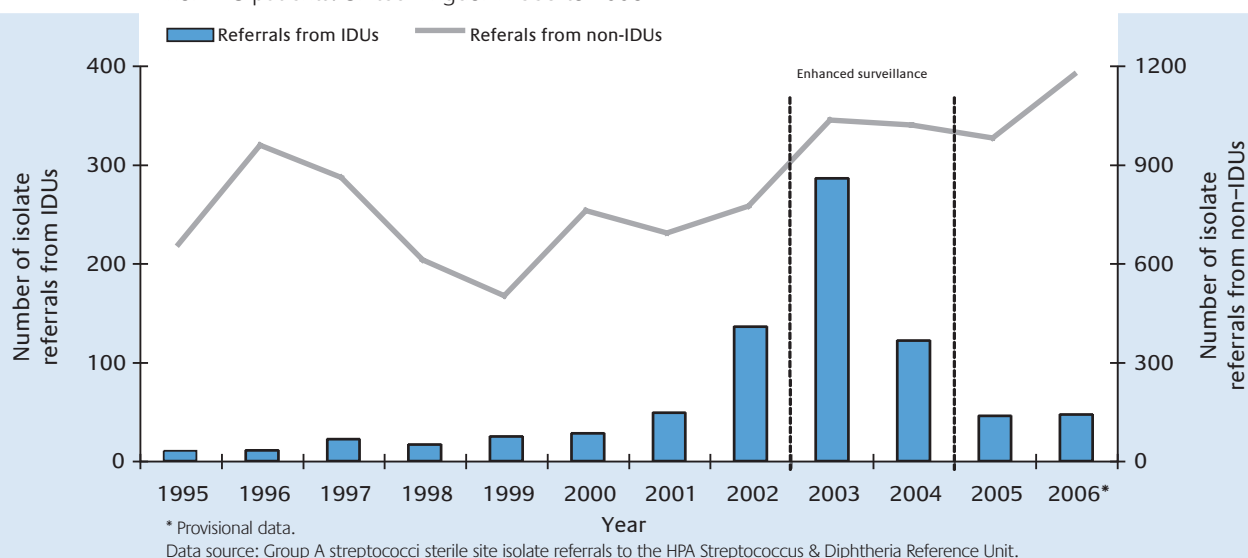
59. The mainly sporadic occurrence of the MRSA strains, with their geographical and temporal distribution, does not suggest a drug contamination problem. Continued surveillance will further our understanding of the pathogenicity and epidemiology of this unusual clone.

Group A Streptococcal Infections

60. Group A streptococci (GAS) can cause skin sepsis and tissue necrosis, potentially leading to bacteraemia through the infection of injecting sites.

Figure 5:

Invasive isolates of group A streptococci from injecting drug user (IDU) and non-IDU patients: United Kingdom 1995 to 2006



^{59,60} The MRSA exhibit a distinctive antibiogram (ciprofloxacin susceptible, but fusidic acid and erythromycin resistant), they are lysed by a broad range of bacteriophages, encode enterotoxins A and H, and belong to clonal complex 1 (CC1).

61. Although routine laboratory reports of invasive GAS infections to Cfl rarely contain information on risk factors, isolate referrals to the HPA's Respiratory and Systemic Infection Laboratory (RSIL) do contain such information. Monitoring of these identified a rise in referrals from IDUs, from less than 10 per annum in the early to mid-1990s to 81 in the first nine months of 2002⁶¹. A total of 286 invasive GAS reports in IDUs were received in 2003, after which time the number of referrals from IDUs fell markedly to 122 in 2004, levelling off to just under 50 in 2005 and 2006 (Figure 5).
62. Most cases presented with skin sepsis, bacteraemia and evidence of tissue damage at the injection site, which ranged from extensive oedema to necrosis. The majority were sporadic cases but several clusters were also identified. Serotyping data have revealed a diverse range of types****. The geographical and temporal dissemination along with the serological typing data do not suggest a drug contamination problem.
63. Enhanced surveillance data gathered during the strep-EURO programme identified injecting drug use as being one of the most important risk factors for severe group A streptococcal infections in the UK, with just over one fifth of reports being in IDUs. This proportion was markedly higher than for any other participating country⁶². Further epidemiological investigation will be undertaken to identify any clustering among these cases.
64. Clostridia are a group of spore-forming bacteria that are widely found in the environment. The spores produced by these bacteria may end up in drugs, such as heroin, through environmental contamination. They may cause wound infections among IDUs, particularly if they enter an intramuscular or subcutaneous injection site****, and can then produce toxins causing illness such as tetanus or 'gas gangrene' with potentially severe or fatal outcomes.
65. Botulism is an illness caused by toxins produced by the bacterium *Clostridium botulinum*. Wound botulism occurs when wounds, such as injecting sites, are infected with *C. botulinum*. Clinical symptoms can progress rapidly from blurred vision, slurred speech and muscle weakness to paralysis and respiratory failure. This can result in hospitalisation and lengthy recovery periods and in some cases can be fatal. Botulinum antitoxin is effective at reducing symptoms if given early in the course of the infection. Wound botulism amongst IDUs remains rare in the UK.
66. Prior to 2000 no cases of wound botulism had been reported among IDUs in the UK⁶³. By the end of 2006 a total of 134 suspected cases had been reported. Overall, 113 (84%) of the cases occurred in England, 17 in Scotland, three in Wales, and one in Northern Ireland. For cases where information was available the ratio of males to females was 2.5 to 1, and the age ranged from 17 years to 58 years with an average age of 36 years. There was a wide spectrum of illness severity and speed of onset, from 1-3 days to 18 days. At least 7 individuals died. Where information was available, the majority reported injecting heroin and the average length of injecting career was 10 years. Of cases during 2004 to 2006 (where information was available) 98% (53 of 54) were admitted to hospital and 80% (43 of 54) were admitted to intensive care⁶⁴.
67. Cases of wound botulism continue to occur among IDUs in the UK. In 2006, 22 suspected cases were reported, fewer than in each of the previous two years, with 28 cases reported in 2005 and 40 in 2004. Of the 22 cases in 2006, 18 were in England, three in Scotland, and one in Wales. The cases in England were distributed throughout the country with reports from seven of the nine regions⁶⁵.

Tetanus

68. A toxin produced by *Clostridium tetani* causes tetanus. It usually presents with local fixed muscle rigidity and painful spasms confined to the area close to the site of injury or injection, however symptoms can range from mild trismus ('lockjaw'), neck stiffness and/or abdominal rigidity to generalised tetanus (a serious condition that can include respiratory difficulties and severe painful spasms). Tetanus is a vaccine preventable disease, and the vaccine is routinely offered in childhood and adolescence as well as to adults for specific indications¹⁴. Potential sources for tetanus infection in IDUs are contaminated drugs, injecting equipment and skin.

69. Before 2003, tetanus had rarely been reported in IDUs in the UK, with only two of the 175 cases identified in England and Wales, through enhanced surveillance between 1984 and 2000, known to be IDUs⁶⁶. This was in contrast to reports from the United States of America where IDUs accounted for around one in six cases between 1995 and 2000⁶⁷. The situation changed in 2003 when an outbreak of tetanus developed amongst IDUs in the UK, with 25 cases reported between 2003

Clostridial infections

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**** Serotypes M1, R28, M11 and M12 predominated during the years 1995 to 1998 with the emergence of 'higher types' during recent years; M78, M82, M83, M87, M89.

**** Tissue damage at intramuscular or subcutaneous injection sites is more likely to lead to an anaerobic environment.

and 2004^{68,69,70}. The majority had generalised tetanus and three cases died. Most cases reported subcutaneous injection of heroin ('skin popping'), and the majority were in women with the male cases being older. Many cases were un-immunised or partially immunised and most had tetanus antibody levels below the protective threshold. The widespread distribution of the cases suggests that the outbreak may have been due to heroin being contaminated with tetanus spores relatively high up in the supply chain. This has led to vaccination guidance for IDUs being updated to ensure that their tetanus immunisation status is actively checked¹⁴ and that the use of human tetanus immunoglobulin is considered for IDUs with injection site infections. In 2006 there were three cases of tetanus reported to the HPA in England, one of which was known to have been an IDU, no cases of tetanus were reported for the rest of the UK. Whilst in 2005, four of the six cases of tetanus reported in the UK were in IDUs, indicating that tetanus continues to affect IDUs, albeit at lower numbers than in 2003 and 2004.

Other clostridial infections

70. In addition to botulism and tetanus there are other serious clostridial infections that may be acquired through injecting contaminated drugs. During 2000 there was an outbreak of serious illness and death among IDUs, due to *Clostridium novyi*^{71,72}. Laboratory work has shown that *C. novyi* spores can easily survive the "cooking-up" process prior to heroin injection⁷³. There have been reports of *Clostridium histolyticum* infection among IDUs⁷⁴, some of whom also had tetanus. Molecular typing has revealed that isolates from cases across the UK in 2003 were indistinguishable, indicating a common source of contamination⁷⁵.

Reported Symptoms of Injecting Site Infections

71. Symptoms of a possible injecting site infection would appear to be common among IDUs, as 35% (655 of 1,882) of IDUs participating in the UAPMP survey in 2006 reported they had experienced either an abscess, sore or open wound, possible symptoms of an injecting site infection, during the previous year. The reporting of such a symptom was associated with having been homeless in the last year, with 36% (290 of 800) of those homeless during the last year reporting a symptom compared with 30% (289 of 960) of those not homeless during the last year.
72. These symptoms of possible injecting site infections were found to be associated with a number of factors among current IDUs. Overall, 37% (566 of 1,531) of the current IDUs participating in the UAPMP survey in 2006 reported these symptoms during the last year. Current IDUs who used certain injection sites reported higher levels of symptoms: those who had injected in to their hands were more like to report such a symptom (49%, 183 of 373) than those who had not (33%, 383 of 1,158), and those who injected in to their legs were also more like to report such a symptom (64%, 182 of 286) than those who had not (31%, 384 of 1,245). Injecting crack-cocaine in the past four weeks was also associated with having had an abscess, sore or open wound, with 43% (238 of 554) those who had injected crack-cocaine reporting such a symptom compared with 34% (328 of 977) of those who had not.

Comments & Conclusions

73. The transmission of HIV, hepatitis B and C continues among IDUs in the UK. Overall almost half of IDUs have been infected hepatitis C, around one in four have been exposed to hepatitis B, and about one in 75 are now infected with HIV. In addition, around one in three IDUs report having had an abscess, open wound or sore (all symptoms of a possible injecting site infection) during the last year. The level of needle and syringe (direct) sharing remains elevated⁹⁹ with around a quarter of IDUs reporting direct sharing during the previous month in 2006. The sharing of other injecting related equipment, particularly mixing containers and filters, is even more common.
74. The high level of homelessness among IDUs is a concern. Around three-quarters of IDUs report having ever been homeless, and for half of these the last time was within the past year. Those reporting homelessness also reported higher levels of risk behaviours, with one in four of those who had ever been homeless reporting the direct sharing of needles and syringes compared with only one in six of those who had not been homeless. A study in Glasgow has suggested that hostel living is related to higher levels of risk behaviour³⁶. The prevalence of both hepatitis B and C infection, and the reporting of symptoms of possible injecting site infections, were higher amongst those who report having been homeless. Studies have found that associations with homelessness and hepatitis C infection remain, even after adjusting for confounders⁷⁶, whilst the recent cohort study in Wales has indicated that homelessness is a key risk factor for hepatitis C transmission among IDUs³⁹.
75. The higher levels of risk, and infection, among IDUs who have experienced homelessness probably reflects the difficulties faced in maintaining hygienic injection practice when homeless. Hygienic injection requires a suitable environment that provides a clean space for preparing the drug and its injection; somewhere clean for storing injecting equipment; and facilities for the safe disposal of used equipment. The role that the environment in which an injection takes place can have on injection hygiene and practice has been highlighted by two Visual Ethnography studies undertaken in England⁷⁷ and Scotland⁷⁸. Homeless IDUs are more likely to inject in unsuitable environments, often public places such as in the street, public toilets, or abandoned buildings; where maintaining hygienic injection practice will be very difficult⁷⁹. This may also be a problem for those who are resident in hostels, if their hostel does not accommodate their drug use³⁶. Together these findings suggest that interventions which are aimed at tackling homelessness could also help in reducing infections, such as hepatitis C, among IDUs.
76. Concerns about homelessness have resulted in a number of actions throughout the UK including the establishment of the Scottish Homelessness Monitoring Group to support and monitor the implementation of the recommendations of the Homelessness Task Force^{80,81} in 2002, whilst Northern Ireland⁸², Wales⁸³, and England⁸⁴ have national strategies. The English strategy, for example, aims to halve the number of households living in temporary accommodation by 2010 through a range of activities to prevent homelessness⁸⁴. Whilst there has been a recent decline in the number of homeless households in England⁸⁵, the majority of these statutory homeless household are however families with, or expecting children⁸⁵. Statutory homeless figures only include those who are accepted by a local authority as being "owed" a duty under housing legislation. There will be others with housing problems who will not fall into this group or who do not even approach local authorities for help with housing⁸⁶. Those not counted will include many single homeless people, who may end up living in hostels or sleeping rough⁸⁶.
77. Individuals living in hostels or sleeping rough often have complex health and social needs, including high levels of drug use and mental health problems^{87,88}. In response to these needs there have been a number of initiatives including a capital expenditure programme to improve hostel accommodation⁸⁹, and the development of guidance on supporting homeless people with both mental health and drug problems⁹⁰. Considering the associations between homelessness and higher levels of infection it is important that the ongoing development of services for the homeless include a full range of integrated measures to reduce and respond to injection related infections among homeless IDUs, such as ensuring easy access to clean injecting equipment, health checks for injection site infections, and access to voluntary confidential testing for HIV and hepatitis C.
78. The overall prevalence of hepatitis C among IDUs in the UK, of almost one in two having been infected, masks marked regional variations in prevalence. Prevalence ranges from one in four or less among IDUs in Wales and the North East of England to more than half of IDUs in London, Glasgow, and the North West of England. The existence of lower prevalence areas suggest that hepatitis C infection is probably not an inevitable consequence of injecting drug use, despite IDUs often depicting hepatitis C as ubiquitous and "beyond prevention"⁹¹. The reasons for these geographic variations in prevalence are currently unclear and require further examination. They will, in part, reflect differing levels of incidence as the recent cohort studies have found a more than six-fold difference in incidence between London⁵⁰ and Wales⁵¹. Worryingly, there is

evidence to indicate that the transmission of hepatitis C among IDUs may have increased since the beginning of the current decade, for example, the prevalence among recent initiates has increased from around one in ten to about one in five. Even so, the overall hepatitis C prevalence among IDUs in the UK is lower than in many other countries, and data from Glasgow suggest a decline in prevalence during the 1990s, so in part the current prevalence might reflect benefits of the interventions introduced in the late 1980s and early 1990s in response to HIV. Exploration of longer-term trends in hepatitis C prevalence among IDUs in England and Wales, through the testing of stored samples from the early 1990s, will provide further evidence.

79. Associations between crack-cocaine use and higher levels of hepatitis C infection and injecting risk are a concern. Particularly as there is evidence to indicate that the use and injection of crack-cocaine is becoming more common⁹², with around one-third of IDUs now reporting injecting crack-cocaine. However, there is a need to further investigate the associations between crack-cocaine use and risk, as the extent to which factors such as homelessness, the injecting environment and injecting practices interplay with crack-cocaine injection remain unclear^{76,77}. There is also evidence that groin injecting, which is particularly risky, has become more commonplace and acceptable⁹³, with around one-third of IDUs now reporting this.
80. The proportion of IDUs in contact with drug services self-reporting having ever had a voluntary confidential test for hepatitis C has increased markedly over recent years with three-quarters now reporting ever accepting the offer of a test. However, almost half of IDUs with hepatitis C infection in contact with drug services in England and Wales are still unaware of their infection. It is likely that a greater proportion of those with hepatitis C who are not in contact with drug services will be unaware of their infection.
81. The prevalence of HIV among IDUs in the UK remains higher than it was at the beginning of the decade, however it is still low compared with many other countries. The prevalence remains elevated among current IDUs in London with around one in 20 infected, elsewhere in England and Wales the prevalence was about one in 150 in 2006, up from around one in 400 in 2002. In Scotland, one in 130 IDUs are probably infected with HIV and this has changed little in recent years. There is evidence of ongoing HIV transmission within the UK and that this has probably increased in recent years. In particular, the HIV prevalence amongst recent initiates, those injecting for less than three years, has been elevated since 2002. Whilst the annual number of reports of newly diagnosed HIV infections associated with injecting drug use has not changed greatly over recent years, the proportion thought to have been acquired abroad has declined.
82. The continuing occurrence of wound botulism cases is a concern, and cases have also been reported in several other European countries in recent years^{94,95,96,97,98}. Healthcare workers should remain alert to the possibility of clostridial infections among IDUs, particularly those who inject subcutaneously or intramuscularly, risk factors associated with wound botulism.
83. The reasons for the continuing occurrence of MRSA and severe GAS infections are unclear and need further investigation. The increased occurrence of bacterial infections at injection sites might reflect an increased vulnerability of IDUs due to changes in risk behaviour⁹⁹, which might be associated with the increased use of crack-cocaine⁹². The increases in GAS cases up to 2003 may have been, in part, due to increased awareness and microbiological investigations following the outbreak of severe illness due to *Clostridium novyi* in 2000^{71,100}, however, the trend pre-dates this. Furthermore, findings from a GAS cluster in London, where risk factor information and routine sampling had been undertaken consistently since 1970, argue against increased ascertainment as the sole explanation¹⁰¹. The subsequent recent decrease in severe GAS infection reports, particularly in specific areas in the north of England where previous increases have been reported¹⁰², may be attributable to the success of targeted healthcare interventions, but this has yet to be confirmed.
84. NEX schemes are the key service for reducing infections and maintaining good injection hygiene as they provide sterile injection equipment, information and advice. The results of the national audits of NEX undertaken in 2005^{20,21} indicated a great diversity in provision across the UK. The findings also supported previous concerns about the coverage of NEX services and that this might be insufficient²⁴. The NEX audit indicated that almost 80% of NEX sites were situated in pharmacies¹⁰³. Agency-based NEX (that is standalone NEXs or NEXs based in multi-services drug agencies) typically provide a wider range of other services, such as face-to-face advice and on-site vaccination, than pharmacy-based services. Those commissioning services should monitor NEX provision to ensure accessible provision of sufficient needles and syringes to prevent sharing, and that this

provision is responsive to changing patterns of drug use and risk. In England a national monitoring system of NEX throughput of injecting equipment is being developed by the NTA.

85. The significant reductions in both the frequency of injecting and rates of direct sharing reported among recent initiates in Glasgow¹⁰⁴, following revised guidelines by Scotland's Lord Advocate allowing greater numbers of needles and syringes to be obtained per NEX visit, are encouraging. While these changes may have stemmed from factors other than the increased availability of needles and syringes, the study concluded that "it would seem prudent to continue with the current new policy on needle and syringe distribution"¹⁰⁴ and IDUs should be encouraged to make use of their entitlement to a greater number of sterile needles and syringes.
86. Infections, such as hepatitis C, may be reduced by the provision of sterile injecting equipment other than needles and syringes, such as mixing containers; whilst the correct use of sterile swabs before injection could help reduce bacterial infections at injecting sites. Results from the NEX audits^{20,21} and from the 2006 drug services user satisfaction survey in England¹⁰⁵ suggest that there is currently great variability in the range of injecting equipment offered to clients in addition to needles and syringes, and that provision is not related to need. Those commissioning services should monitor NEX provision to ensure appropriate local provision of sterile water, swabs, mixing containers, citric acid, and filters.
87. Around one in five injectors have been infected with hepatitis B, and new infections are continuing to occur. Vaccine coverage continues to increase with the majority of IDUs now having taken up the offer of vaccination. There is however wide regional variations in the levels uptake of the hepatitis B vaccination¹⁰⁵. The overall improvement in uptake of the vaccine probably reflects improved provision through drug services and the prison vaccination programmes¹⁰⁶. In England the majority of prisons offer vaccination, and with Primary Care Trusts now responsible for delivering prison health services, vaccine provision through prisons should improve further. Since the Scottish Prison Service introduced its hepatitis B vaccination programme to all inmates in 1999, there have been no outbreaks of acute hepatitis B infection among IDUs in Scotland³⁵.
88. Following the recent outbreaks of tetanus⁶⁸ and hepatitis A⁴⁶ consideration should be given to offering vaccination or boosters against these infections as appropriate. Introducing hepatitis A vaccination^{14,107} in conjunction with existing hepatitis B vaccination programmes should be examined. A combined hepatitis A and B vaccine is available and this may be more popular with clients than offering the single vaccines together¹⁰⁷. Health professionals in contact with IDUs should also ask clients about their tetanus immunisation status. IDUs who have not received five doses of tetanus vaccine, or who are unsure of their vaccination status, should be offered vaccination boosters as appropriate. Unvaccinated IDUs should be encouraged to complete a full course of tetanus vaccinations¹⁴.
89. The recent National NEX audits^{20,21} indicate that amongst agency-based specialist NEX services, at most only half provided on-site hepatitis B vaccination and at most one-quarter offered hepatitis A vaccination. Provision of the tetanus vaccine was even less common. These findings support other indications that NEX services are less likely to provide hepatitis B vaccine doses to IDUs than prisons or drug treatment services¹⁰⁶. It is of concern that so few NEX services report providing onsite vaccination, given that these are likely to be the first drug service that new IDUs will come into contact with. In England the NTA performance manages the offer of vaccination through drug services using the annual drug treatment plan.
90. Since the late 1990s the focus of policy^{2,32} around drug use has broadened from a public health perspective to the minimisation of wider social harm, including crime and anti-social behaviour¹⁰⁸. This has led to an expansion of treatment services that aim to help people stop using drugs. The current drug strategy also identifies the need for further action to "improve the health of drug misusers and drive forward action to reduce the risk of death"⁹². Considering the current extent of injecting related infections, services should be commissioned to provide clear information and practical advice on safer injecting practices, avoiding injecting site infections, prevention of blood-borne virus transmission, and the safe disposal of used equipment; on-site access to vaccination and voluntary confidential testing services; basic health checks for injection site infections; and easy referral to treatment services for those who wish to modify or reduce their drug use. The recent update of Models of Care¹⁶, which provides a framework for the provision of treatment to drug users in England, sets a clear structure for the provision of these services, and NEX, across the range of agencies working with drug users.

91. The Treatment Outcomes Profile (TOP) which was launched by the NTA on 1st April 2007, will be the first standard outcome monitoring tool to be implemented into any national drug treatment system. This short validated data collection tool, is comprised of twenty questions which enable the drugs workers to regularly monitor key treatment. In England TOP data is being collected by the National Drug Treatment Monitoring System from October 1st 2007. The TOP includes detailed questions on drug and alcohol use, injecting risk behaviour, criminal activity, social functioning and physical and mental health, and its regular completion will enable assessment of the impact of treatment services on actual client behaviour including injecting risk.
92. In England Substance Misuse Improvement Reviews were launched as partnership between the NTA and Healthcare Commission in 2005. These reviews provide independent assessments of the drug treatment services in each Drug Action Team (DAT) area to facilitate improvements in key aspects of services. The 2006/7 Improvement Review included provision of harm reduction services (those services that aim reduce harms such as infections among those who continue to use drugs). Areas were assessed against the following criteria: harm reduction was being embedded in the local drug treatment system; service users have prompt and flexible access to needle exchange services, vaccination, testing and treatment for blood born viruses; action is taken to reduce the number of drug-related deaths; and the staff were competent to deliver effective harm reduction services. In autumn 2007 the performance scores will be published, and help will then be given to the organisations (approximately 10%) that receive the weakest assessments to develop an action plan to improve their performance. These scores will also provide local areas with a baseline against which they can measure improvements.
93. The Department of Health, with the NTA, has recently launched an action plan for reducing drug related harm in England which includes infections as one of its focuses. This plan includes actions to provide targeted health promotion campaigns, including work on hepatitis B immunisation; to improve delivery of harm reduction messages such as through the development of good practice standards for needle and syringe programmes; and to improve the quality and availability of surveillance information including data on hepatitis C prevalence and on drug related deaths update. This will also include an update of the guidance on hepatitis C for those working with drug users. These actions build upon those set out in the Hepatitis C Action Plan for England⁸ and complement the service framework set out in Models of Care¹⁶.
94. The National Institute for Health and Clinical Excellence (NICE) published technical appraisals and guidelines relating to the appropriate provision of methadone, buprenorphine, opioid detoxification¹³, and psychosocial interventions¹². An update of the national guidance – Drug Misuse and Dependence Guidelines for Clinical Management¹¹ – has also been published recently. The need for harm reduction interventions is highlighted in all these publications. Commissioners and providers of services for drug users will need to ensure that these are addressed when planning and implementing services in response to local need.
95. In 2006, the Scottish Executive Health Department published its first Hepatitis C Action Plan⁹. This Plan covers a two-year period from September 2006 to August 2008 and will, in part, lay the foundation for further long-term action beyond September 2008. The overall aims of the Scottish Action Plan are: to put in place mechanisms to ensure better coordination, planning and accountability of services; to build on existing activities and interventions to reduce the number of new cases of hepatitis C in Scotland; to provide professionals and service users with the information and support they need; and to gather robust data to inform the development and expansion of testing, treatment and care services beyond 2008. The Action Plan acknowledges that efforts to prevent hepatitis C in Scotland must focus on preventing transmission among IDUs, through improving the accessibility and effectiveness of drug treatment, rehabilitation, needle exchange and other harm reduction services.
96. An Action Plan for the Prevention, Management and Control of Hepatitis C in Northern Ireland was launched in January¹⁰. This contains a range of actions to address hepatitis C in Northern Ireland, a number of which are targeted at IDUs. These include raising awareness of risk behaviours amongst IDUs; training, information and guidance on blood borne viruses for professionals; development of local multi-agency arrangements for hepatitis C prevention; and further development of NEX schemes.

97. There is a need for research and development projects, to pilot and evaluate innovative intervention options for improving injection hygiene, such as novel approaches to providing practical training to IDUs on safer injecting. Such projects should draw upon the lessons learnt in other countries such as the pilots of Drug Consumption Rooms (DCR)^{109,110,111}. A pilot of a DCR facility within the UK has been recommended by both an expert group convened by the Joseph Rowntree Foundation in 2006¹¹² and the Home Affairs Select Committee in 2002¹⁰⁹ but there remain legal issues relating to their operation within the UK. There is also a need to examine the appropriate mix and coverage of a range of existing interventions in the UK that aim to prevent infections, including specialist drug treatment, NEX, and targeted outreach.
98. There would appear to be a need for research studies to explore the factors that impact on injecting risk behaviour and how these interact with one another. Factors considered should include homelessness, injecting in public and semi-public places, and the increasing acceptability of groin injection, as well as the growing use of crack-cocaine. In addition, there is a need to explore the feasibility of interventions designed to prevent, or reduce, initiation of drug injecting among non-injecting drug users.
99. IDUs in the UK are continuing to contract a wide range of infections, and public health surveillance systems need to be maintained and developed to provide continued vigilance. Systems to improve our understanding of the extent of injecting site infections need to be investigated and developed. There is ongoing work to improve surveillance of viral hepatitis as part of the implementation of national standards for the surveillance of hepatitis B and C in the HPA¹⁹, through the collation at a national level data on acute hepatitis B cases from local health protection units. Provisional data will be available from the start of 2007, however the quality and completeness of this information is uncertain, and the interpretation of trends in incidence will be difficult, given the lack of baseline data.
100. The UAPMP agency survey continues to provide valuable data on blood-borne viruses and associated risks among IDUs in contact with services. The UAPMP enhancement pilot provided important additional data, particularly on behaviours and drug use, and its continuation needs to be considered by the HPA. The ongoing development of a companion unlinked anonymous survey in Scotland should in the future provide comprehensive UK-wide data.

Appendix: Sources of information and advice on reporting infections and investigating outbreaks

Notifiable diseases

Tetanus. Laboratories are requested to report all confirmed cases to Cfl in England, to the NPHS in Wales, to CDSC in Northern Ireland and to HPS in Scotland. Information and advice for clinicians, microbiologists and injecting drug users is available at: www.hpa.org.uk/infections/topics_az/tetanus/menu.htm and from HPS for Scotland at www.hps.scot.nhs.uk/immvax/tetanus.aspx?subjectid=126

Information on reference laboratory services for tetanus are included in the RSIL user manual at: www.hpa.org.uk/srmd/div_rsil/rsiluser.pdf

Hepatitis A. Laboratories are requested to report all confirmed cases to Cfl in England, to the NPHS in Wales, to CDSC in Northern Ireland and to HPS in Scotland. Information and advice for clinicians and injecting drug users in England and Wales is available on the HPA website at: www.hpa.org.uk/infections/topics_az/hepatitis_a/menu.htm

Hepatitis B & C. Laboratories are requested to report all confirmed cases to Cfl in England, to the NPHS in Wales, to CDSC in Northern Ireland and to HPS in Scotland.

Further information can be found for hepatitis B at www.hpa.org.uk/infections/topics_az/hepatitis_b/menu.htm and www.hps.scot.nhs.uk/bbvsti/hepatitisb.aspx?subjectid=92

Further information can be found for hepatitis C at www.hpa.org.uk/infections/topics_az/hepatitis_c/menu.htm and www.hps.scot.nhs.uk/bbvsti/HepatitisC.aspx?subjectid=93

Support for management of individual cases and their contacts and of outbreaks is available at local level from the Health Protection Unit and at national level from Cfl and the NPHS in Wales, CDSC Northern Ireland and HPS (Scotland). Policy advice on vaccination (tetanus, hepatitis A & B) is developed for the UK by the UK Joint Committee on Vaccination and Immunisation. Policy advice for viral hepatitis is developed for the UK by the Department of Health Advisory Group on Hepatitis.

Other infections

Wound botulism. Information and advice for clinicians and injecting drug users in England and Wales is available on the HPA website at: www.hpa.org.uk/infections/topics_az/botulism/menu.htm

Laboratory investigation of cases of botulism (detection of neurotoxin and isolation of *Clostridium botulinum*): Food Safety Microbiology Laboratory, Cfl, HPA, 61 Colindale Ave, London NW9 5EQ. Telephone: 020 8200 4400

Other clostridia infections. Identification of other clostridial, or other anaerobic, isolates from IDU wounds, blood and cultures: Anaerobe Reference Laboratory, NPHS Microbiology Cardiff, University Hospital of Wales, Cardiff, CF14 4XW Tel: 02920 742378 or 742171

Group A streptococci. Information and advice for clinicians in England and Wales is available on the HPA website at: www.hpa.org.uk/infections/topics_az/strepto/non_pyogenic/HPA_Group_A_streptococci_Default.htm

Information on reference laboratory services for GAS are included in the RSIL user manual at: www.hpa.org.uk/cfi/rsil/default.htm

Staphylococcus aureus infections. Information and advice for clinicians is available on the HPA website at www.hpa.org.uk/infections/topics_az/staphylo/default.htm. Identification and characterisation of MSSA and MRSA from IDUs: Staphylococcus Reference Unit, Cfl, HPA, 61 Colindale Avenue, London, NW9 5EQ. Telephone: 020 8327 7227.

References

- 1 Unlinked Anonymous HIV Surveys Steering Group. Prevalence of HIV in the United Kingdom, Data to end of 1998. London: Department of Health, Public Health Laboratory Service, Institute of Child Health (London), Scottish Centre for Infection and Environmental Health; 1999.
- 2 Update Drugs Strategy. London: Home Office, 2002. ISBN 1-84082-9397
- 3 Tackling Drugs to Build a Better Britain: The Governments Ten-year Strategy for Tackling Drug Misuse. London: Stationary Office, 1998
- 4 Tackling Substance Misuse in Wales – A Partnership Approach. Cardiff: The National Assembly for Wales, 2000. ISBN 0 7504 2438 9
- 5 Drug Strategy for Northern Ireland. Belfast: Northern Ireland Office, 1999. www.nics.gov.uk/drugs/pubs/strat.pdf
- 6 Tackling Drugs in Scotland - Action in Partnership. Edinburgh: The Scottish Office, 1999. ISBN 0 7480 7293 4
www.scotland.gov.uk/library/documents-w7/tdis-00.htm
- 7 National enhanced service: Patients suffering from drug misuse. www.nhsemployers.org/primary/primary-902.cfm
- 8 Hepatitis C Action Plan for England. London: Department of Health, 2004
www.dh.gov.uk/assetRoot/04/08/47/13/04084713.pdf
- 9 Hepatitis C Action Plan for Scotland - Phase I: September 2006 - August 2008. Edinburgh: Scottish Executive, 2006. ISBN: 07559-5203-0.
www.scottishexecutive.gov.uk/Resource/Doc/148746/0039553.pdf
- 10 The Action Plan for the Prevention, Management and Control of Hepatitis C in Northern Ireland. Belfast: Department of Health, Social Services and Public Safety, 2007. www.dhsspsni.gov.uk/hepatitisc-actionplan-2007.pdf
- 11 Drug misuse and dependence – guidelines on clinical management: update 2007. London: Department of Health, 2007.
- 12 Drug misuse: psychosocial interventions. NICE, Clinical Guideline, CG51, July 2007. <http://guidance.nice.org.uk/CG51>
- 13 Drug misuse: opioid detoxification. NICE, Clinical Guideline, CG52, July 2007. <http://guidance.nice.org.uk/CG52>
- 14 Immunisation against infectious disease (The Green Book). London: Department of Health, 2006.
www.dh.gov.uk/en/Policyandguidance/Healthandsocialcaretopics/Greenbook/DH_4097254
- 15 Needs assessment guidance for adult drug treatment. London: NTA, August 2007.
www.nta.nhs.uk/publications/documents/nta_needs_assessment_guidance_2007.pdf
- 16 Models of Care for the Treatment of Adult Drug Misusers. National Treatment Agency for Substance Misuse. London, 2006. MOC3.
- 17 Marsden J, Farrell M, Bradbury C, Dale-Perera A, Eastwood B, Roxburgh M & Taylor S. The Treatment Outcomes Profile (TOP): A structured interview for the evaluation of substance misuse treatment. London: National Treatment Agency for Substance Misuse, 2007.
www.nta.nhs.uk/areas/outcomes_monitoring/
- 18 Reducing Drug-related Harm: An Action Plan. London: Department of Health, 2007. 281030 1p 3k May 07 (CWP)
- 19 Standards for local surveillance and follow up of hepatitis B and C. Health Protection Agency, April 2006.
http://www.hpa.org.uk/infections/topics_az/hepatitis_b/pdf/StandardsforsurveillancefollowuphepBCApril06.pdf
- 20 National Treatment Agency for Substance Misuse. Findings of a survey of needle exchanges in England. London: NTA, May 2006. Summary report. www.nta.nhs.uk/publications/documents/nta_findings_survey_needle_exchanges_2005_rb17.pdf
- 21 Needle Exchange Provision in Scotland: A report of the National Needle Exchange Survey. Edinburgh: Scottish Executive, July 2006.
www.scotland.gov.uk/Publications/2006/06/16110001/0
- 22 Hay G, Gannon M, MacDougall J, Millar T, Eastwood C, McKeganey N. Local and national estimates of the prevalence of opiate use and/or crack cocaine use (2004/05). In: Measuring different aspects of problem drug use: methodological developments. Ed. Singleton N, Murray R, Tinsley L. London, Home Office, 2006. Home Office Online Report, 16/06. ISBN-13: 978 1 84726 123 6
<http://www.homeoffice.gov.uk/rds/pdfs06/rdsolr1606.pdf>
- 23 De Angelis D, Hickman M, Yang S. Estimating long-term trends in the incidence and prevalence of opiate/injecting drug use and the number of ex-users: the use of back-calculation methods and opiate overdose deaths. *American Journal of Epidemiology* 2004;160:994-1004
- 24 Hickman M, Higgins V, Hope V, Bellis M, Tilling K, Walker A, Henry J. Injecting drug use in Brighton, Liverpool, and London: best estimates of prevalence and coverage of public health indicators. *Journal of Epidemiology and Community Health* 2004;58:766-771
- 25 Hay G, McKeganey N, Hutchinson S, on behalf of project team. Estimating the National and Local Prevalence of Problem Drug Misuse in Scotland. Edinburgh: ISD, 2001
- 26 Bird SM, Hutchinson SJ, Goldberg DJ. Drug-related deaths by region, sex, and age-group per 100 injecting drug users in Scotland, 2000-01. *Lancet* 2003;362:941-944.
- 27 Hay G, Gannon M, McKeganey N, Hutchinson S, Goldberg D. Estimating the National and Local Prevalence of Problem Drug Misuse in Scotland. Edinburgh: ISD, 2005.
- 28 Working Party of the Royal College of Psychiatrists and Royal College of Physicians. Drugs Dilemmas and Choices. London: Gaskell, 2000
- 29 Wadsworth J, Hickman M, Johnson AM, Wellings K, Field J. Geographic variation in sexual behaviour in Britain - implications for STD epidemiology and sexual health promotion. *AIDS* 1996;10:193-9
- 30 Johnson AM, Mercer CH, Erens B, Copas J, McManus S, Wellings K, et al. Sexual behaviour in Britain: partnerships, practises, and HIV risk behaviours. *Lancet* 2001;358:1835-42
- 31 Deaths related to drug poisoning: England and Wales, 1998 –2002. *Health Statistics Quarterly* 21, Spring 2004. London: National Statistics. ISSN 1465 1645

- 32 Tackling Drugs to Build a Better Britain: The Governments Ten-year Strategy for Tackling Drug Misuse. London: Stationary Office, 1998
- 33 Models of Care for the treatment of drug misusers. National Treatment Agency for Substance misuse, London 2002. ISBN 0-9544534-0-9
- 34 NPHS unpublished data. Personal communication, N Craine.
- 35 Hutchinson SJ, Wadd S, Taylor A, Bird SM, Mitchell A, Morrison DS, Ahmed S, Goldberg DJ. Sudden rise in uptake of hepatitis B vaccination among injecting drug users associated with a universal vaccine programme in prisons. *Vaccine* 2004;23:210-214.
- 36 Wadd S, Hutchinson SJ, Taylor A, Ahmed S, Goldberg DJ. High-risk injecting behaviour in hostel accommodation for the homeless in Glasgow 2001-2002; a study combining quantitative and qualitative methodology. *Journal of Substance Use* 2006;11:333-341.
- 37 Glasgow Homelessness Partnership www.glasgow.gov.uk/en/Residents/Care_Support/Homelessness/ChangingGlasgowsServices/ThePartnership/
- 38 Royal College of Physicians of Edinburgh. Consensus Conference on Hepatitis C. April 2004. www.rcpe.ac.uk/education/standards/consensus/hep_c_04.php
- 39 Noel Craine, Mathew Hickman, John V Parry, Josie Smith, A Mark Walker, Barry Nix, Margaret May, Tamara McDonald, Marion Lyons. *HCV incidence amongst drug injectors: effects of opiate substitution treatment and homelessness*. (submitted) 2007
- 40 Hutchinson SJ, Roy KM, Wadd S, Bird SM, Taylor A, Anderson E, Shaw L, Codere G, Goldberg DJ. Hepatitis C virus infection in Scotland: epidemiological review and public health challenges. *Scottish Medical Journal* 2006;51:8-13.
- 41 Hutchinson SJ, Bird SM, Goldberg DJ. Modeling the Current and Future Disease Burden of Hepatitis C among Injection Drug Users in Scotland. *Hepatology* 2005; 42:711-723.
- 42 Hutchinson SJ, McIntyre PG, Molyneaux P, Cameron S, Burns S, Taylor A, Goldberg DJ. Prevalence of hepatitis C among injectors in Scotland 1989-2000: declining trends among young injectors halt in the late 1990s. *Epidemiology and Infection* 2002;128:473-477.
- 43 Roy KM, Hutchinson SJ, Wadd S, Taylor A, Cameron S, Burns S, Molyneaux P, McIntyre P, Goldberg D. Hepatitis C Virus infection among injecting drug users in Scotland: A review of prevalence and incidence data and the methods used to generate them. *Epidemiology and Infection* (in press)
- 44 Prof. Avril Taylor, University of Paisley, personal communication.
- 45 Hutchinson SJ, Bird SM, Taylor A, Goldberg DJ. Modelling the Spread of Hepatitis C Virus Infection among Injecting Drug Users in Glasgow: Implications for Prevention. *International Journal of Drug Policy* 2006;17:211-221.
- 46 Perrett K, Granerød J, Crowcroft N, Carlisle R. Changing epidemiology of hepatitis A: should we be doing more to vaccinate injecting drug users? *Communicable Disease and Public Health* 2003;6:97-100.
- 47 Roy K, Howie H, Sweeney C, Parry J, Molyneaux P, Goldberg D, Taylor A. Hepatitis A Virus and Injecting Drug Misuse in Aberdeen, Scotland: a case-control study. *Journal of Viral Hepatitis* 2004;11:277-282.
- 48 Current notes. Hepatitis A in injecting drug users in Ayrshire. *SCIEH Weekly Report* 2004; 37 (2004/03): 20.
- 49 Hope VD, Judd A, Hickman M, Sutton A, Stimson GV, Parry JV & Gill ON. HIV prevalence among Injecting Drug Users in England & Wales 1990 to 2003: Evidence for increased transmission in recent years. *AIDS* 2005; 19: 1207-1214.
- 50 Judd A, Hickman M, Jones S, McDonald T, Parry JV, Stimson GV, Hall AJ. Incidence of hepatitis C virus and HIV among new injecting drug users in London - prospective cohort study. *British Medical Journal* 2005;330:24-25
- 51 Craine N, Parry, J, McDonald T, Hickman M, Couzens Z, Lyons M, Walker M. The incidence of HCV, HBV and HIV amongst injecting drug users in Wales 2005-2006. Conference presentation at Health Protection 2006, Warwick. www.eventsforce.net/hpa/frontend/absViewDocument.csp?documentID=30&eventID=5&CSPCHD=0030000000b39hv2Nk5003764167245
- 52 Black FL, Biggar RJ, Neel JV, Maloney EM, Waters DJ. Endemic transmission of HTLV-II among Kayapo Indians of Brazil. *AIDS Research and Human Retroviruses* 1994;10:1165-1171
- 53 Krook A & Blomberg J. HTLV-II among injecting drug users in Stockholm. *Scandinavian Journal of Infectious Disease* 1994;26:129-132
- 54 Hall WW, Ishak R, Zhu SW et al. Human T cell lymphotropic virus II (HTLV-II): epidemiology, molecular properties and clinical features of infection. *Journal of AIDS* 1996;13:S204-S214
- 55 Zehender G, Colasante C, Santambrogio S, De-Maddalena C, Massetto B, Cavalli B, et al. Increased risk of developing peripheral neuropathy in patients coinfecting with HIV-1 and HTLV-2. *Journal of acquired immune deficiency syndromes* 2002;31:440-447
- 56 Dougan S, Tosswill JHC, Davison K, Evans B. HTLV diagnoses in England & Wales: 2002 & 2003. Presented at the HTLV European Research Network (HERN) meeting June 2004, Greece
- 57 Methicillin resistant *Staphylococcus aureus* (MRSA) in injecting drug users. *CDR Weekly* 13(27); July 3rd 2003. www.hpa.org.uk/cdr/PDFfiles/2003/cdr2703.pdf
- 58 Kearns AM, Rathmann IR, Holmes A, Pitt TL, Cookson BD. An unusual clone of MRSA causing infection in injecting drug users. *Journal of Infection* 2004;49:49-50.
- 59 Community MRSA in England and Wales: definition through strain characterisation. *CDR Weekly* 15(11); March 17th 2005. www.hpa.org.uk/cdr/archives/2005/cdr1105.pdf
- 60 Coombs GW, Nimmo GR, Bell JM, Huygens F, O'Brien FG, Malkowski MJ, et al, and the Australian group for antimicrobial resistance. Genetic diversity among community methicillin-resistant *Staphylococcus aureus* strains causing infections in Australia. *Journal of Clinical Microbiology* 2004;42:4735-4743.

- 61 Efstratiou A, Emery M, Lamagni TL, Tanna A, Warner M, George RC. Increasing incidence of group A streptococcal infections amongst injecting drug users in England and Wales. *Journal of Medical Microbiology* 2003;52:525-6
- 62 Lamagni T, Siljander T, Darenberg J, Luca B, Bouvet A, Creti R, A. Efstratiou, K. Ekelund, B. Henriques Normark, A. Jasir, M. Koliou, N. Legakis, R. Reinert, C. Schalen, L. Strakova, M. Straut, J. Vuopio-Varkila for the Strep-EURO group. Risk factors for invasive group A streptococcal infections in Europe. 17th European Congress of Clinical Microbiology and Infectious Diseases. Munich, Mar 2007. *Clinical Microbiology and Infection* 13(Suppl 1):S54.
- 63 PHLS. Wound Botulism in an IDU in London. *CDR Wkly* 2000; 10(20):177, 180. www.hpa.org.uk/cdr/archives/CDR00/cdr2000.pdf
- 64 Huntington S, Hope VD, Ncube F, McLauchlin J, Grant K, Mithani V. Wound botulism in injecting drug users in the UK. Poster presentation 397 at the 18th International Conference on the Reduction of Drug Related Harm, Warsaw, 2007
- 65 Wound botulism among injecting drug users in the UK: an update. *HPR Weekly* 1 (7) 27 April 2007. www.hpa.org.uk/hpr/archives/2007/news2007/news1707.htm#botulism
- 66 Rushdy AA, White JM, Ramsay ME, Crowcroft NS. Tetanus in England and Wales 1984 – 2000. *Epidemiology & Infection* 2003; 130:71-7
- 67 CDC. Tetanus surveillance – United States, 1998-2000. *MMWR*; 52: noSS-3, 2003. www.cdc.gov/mmwr/PDF/SS/SS5203.pdf
- 68 Ongoing outbreak of tetanus in injecting drug users in the UK. *Eurosurveillance Weekly* 8(4) 22 January 2003 www.eurosurveillance.org/ew/2004/040122.asp
- 69 Beeching NJ, Crowcroft NS. Tetanus in injecting drug users. The latest *Clostridium* infection to threaten injectors in Britain. *British Medical Journal* 2005;330:208-9
- 70 Hahné SJM, White JM, Crowcroft NS, Brett MM, George RC, Beeching NJ, et al. Tetanus in injecting drug users, United Kingdom [letter]. *Emerging Infectious Diseases*. 2006 12 April. www.cdc.gov/ncidod/EID/vol12no04/05-0599.htm
- 71 Jones JA, Salmon JE, Djuretic T, Nichols G, George RC, Gill ON, on behalf of an investigating team. An outbreak of serious illness and death among injecting drug users in England and Wales during 2000. *Journal of Medical Microbiology* 2002;51:978-98
- 72 McGuigan C, Penrice G, Gruer L, Ahmed S, Goldberg D, Black M, Salmon JE, Hood J. Lethal outbreak of infection with *Clostridium novyi* type A and other spore-forming organism in Scottish injecting drug users. *Journal of Medical Microbiology* 2002;51:971-977.
- 73 Brazier JS, TE Morris, Duerden BI. Heat and acid tolerance of *Clostridium novyi* Type A spores and their survival prior to preparation of heroin for injection. *Anaerobe* 2003;9:141-144
- 74 *Clostridium histolyticum* in injecting drug users. *CDR Weekly* 13(51) 18 December 2003. www.hpa.org.uk/cdr/PDFfiles/2003/cdr5103.pdf
- 75 Outbreak of *Clostridium histolyticum* infections in injecting drug users in England and Scotland. *Eurosurveillance* 2004;9:3;15-16
- 76 Hickman M, Hope V, Brady T, Madden P, Jones S, Honor S, Holloway G, Ncube F, Parry J. Hepatitis C (HCV) prevalence, and injecting risk behaviour in multiple sites in England in 2004. *Journal of Viral Hepatitis* 2007;14:645–652
- 77 Rhodes T, Briggs D, Holloway G, Jones S, Kimber J. Visual assessments of injecting drug use - a pilot study. National Treatment Agency for Substance Misuse. London, 2006. RB13.
- 78 Taylor A, Fleming A, Rutherford J, Goldberg D. Examining the injecting practices of injecting drug users in Scotland. Edinburgh: Effective Interventions Unit, Scottish Executive, 2004
- 79 Rhodes T, Kimber J, Small W, Fitzgerald J, Kerr T, Hickman M, Holloway G. Public injecting and the need for 'safer environment interventions' in the reduction of drug-related harm. *Addiction* 2006;101:1384-1393
- 80 Health and Homelessness standards. www.scottishexecutive.gov.uk/Publications/2005/03/20774/53764
- 81 Homelessness Monitoring Group. Scottish Executive. Accessed 13/08/07 www.scotland.gov.uk/Topics/Housing/homeless/H-M-G
- 82 The Homelessness Strategy. Belfast: Northern Ireland Housing Executive, September 2002. www.nihe.gov.uk/publications/reports/homeless02.pdf
- 83 National Homelessness Strategy for Wales 2006-2008. Cardiff: National Assembly for Wales, November 2005. new.wales.gov.uk/dsjr/publications/housing/homelessnessstrategy/strategy?lang=en
- 84 Sustainable Communities: settled homes; changing lives. London: Department of Communities and Local Government, March 2005. ISBN 1 85112 779 8. www.communities.gov.uk/pub/784/SustainableCommunitiesSettledHomesChangingLivesPDF796Kb_id1149784.pdf
- 85 Statutory Homelessness: 4th Quarter 2006, England. Communities and Local Government Statistical Release 2007/0040. London, 12 March 2007. www.communities.gov.uk/pub/694/Statutoryhomelessness4thquarter2006EnglandPDFversionofthewholereleasePDFstatutod_id1508694.pdf
- 86 Homelessness. Shelter factsheet. Shelter. London, January 2007. england.shelter.org.uk/files/docs/26304/Factsheet%20Housing%20and%20homelessness.pdf
- 87 Street Homelessness. Shelter factsheet. Shelter. London, August 2006. england.shelter.org.uk/files/docs/22945/Street%20Homelessness%20factsheet.pdf
- 88 J, Howes, S and Baker, O (ed) Home and Dry? Homelessness and Substance Use. London: Crisis, February 2002. ISBN 1 899257 50 0 www.crisis.org.uk/pdf/homeandd.pdf
- 89 Places of Change - Tackling homelessness through the Hostels Capital Improvement Programme. London: Department of Communities and Local Government, November 2006, 06 HHS 04201. www.communities.gov.uk/staging/embedded_object.asp?id=1504549

- 90 Achieving Positive Shared Outcomes in Health and Homelessness. London: Department of Communities and Local Government, April 2004. 04 HMD 02051A www.communities.gov.uk/pub/793/AchievingPositiveSharedOutcomesinHealthandHomelessnessPDF223Kb_id1149793.pdf
- 91 Rhodes T; Davis M, Judd A. Hepatitis C and its risk management among drug injectors in London: renewing harm reduction in the context of uncertainty. *Addiction*, 2004; 99:621-33
- 92 Hope VD, Hickman M, Tilling K. Capturing crack-cocaine use: Estimating the prevalence of Crack-cocaine use in London using capture-recapture with covariates. *Addiction*, 2005; 100: 1701-1708
- 93 Rhodes T, Stoneman A, Hope VD, Hunt N, Martin A, Judd A. Groin injecting in the context of crack cocaine and homelessness: From 'risk boundary' to 'acceptable risk'? *International Journal of Drug Policy*, 2006; 17:164-170
- 94 Kuusi M, Hasseltvedt V, Aavitsland P. Botulism in Norway. *Eurosurveillance* 1999;4;11-12. www.eurosurveillance.org/em/v04n01/0401-225.asp
- 95 Burnens A. Cases of wound botulism in Switzerland. *Eurosurveillance Weekly* 4(5) 3 February 2000. www.eurosurveillance.org/ew/2000/000203.asp
- 96 Scheibe F. Wundbotulismus Nach Drogeninjektion (Wound botulism after drug injection) *Deutsche Medizinische Wochenschrift* 2002;127:199-202
- 97 Rundervoort RS, van der Ven AJ, Vermeulen C, van Oostenbrugge RJ. The clinical diagnosis 'wound botulism' in an injecting drug addict. *Nederlands Tijdschrift Geneeskunde* 2003;147:124-7.
- 98 Alpers K, van Treeck U, Frank C. Outbreak of wound botulism in injecting drug users in Germany, October-December 2005. *Eurosurveillance Weekly* 2005;10 (12);4 www.eurosurveillance.org/ew/2005/051215.asp#4
- 99 Hope VD, Rogers PA, Jordan L, Paine TC, Barnett S, Parry JV *et al.* Sustained increase in the sharing of needles and syringes among drug users in England and Wales. *AIDS* 2002;16:2494-6.
- 100 McLauchlin J, Mithani V, Bolton FJ, Nichols GL, Bellis MA, Syed Q *et al.* An investigation into the microflora of heroin. *Journal of Medical Microbiology*, 2002;51:1001-8.
- 101 Group A streptococcal bacteraemia among injecting drug users. *CDR Weekly* 12(22); 30 May 2002. www.hpa.org.uk/cdr/PDFfiles/2002/cdr2202.pdf
- 102 Engler KH, Perrett K. Group A streptococcal bacteraemia in Yorkshire and the Humber: evidence of another problematic infection amongst injecting drug users. *Communicable Disease and Public Health*, 2004;7;123-127
- 103 McVeigh J, Beynon C, Bellis MA. New challenges for agency based syringe exchange schemes: analysis of 11 years of data (1991-2001) in Merseyside and Cheshire, United Kingdom. *International Journal of Drug Policy* 2003;14:399-405
- 104 Taylor A, Allen E, Hutchinson S, Roy K, Goldberg D, Ahmed S, Roberts K. Evaluation of the Lord Advocate's Guidance on the distribution of sterile needles and syringes to injecting drug users. Effective Interventions Unit, Edinburgh 2005.
- 105 Harm Reduction Findings from the NTA's 2006 Survey of User Satisfaction in England. London: NTA, August 2007. www.nta.nhs.uk/publications/documents/nta_2006_harm_reduction_survey.pdf
- 106 Hope VD, Ncube F, Hickman M, Judd A, Parry JV. Hepatitis B vaccine uptake among injecting drug users in England 1998 to 2004: is the prison vaccination programme driving recent improvements? *Journal of Viral Hepatitis* 2007;14:653-660.
- 107 Crowcroft NS. Hepatitis A virus infections in injecting drug users. *Communicable Disease and Public Health* 2003;6:82-84
- 108 Stimson, GV. 'Blair declares war': the unhealthy state of British drug policy. *International Journal of Drug Policy* 2000;11:259-264
- 109 Select Committee on Home Affairs published its Third Report 'The Government's Drugs Policy: Is It Working? HC 318-I 22 May 2002, ISBN 0 10 500334 9
- 110 Wood E, Kerr T, Montaner JS, Strathdee SA, Wodak A, Hankins CA, Schechter MT, Tyndall MW. Rationale for evaluating North America's first medically supervised safer-injecting facility. *Lancet Infectious Diseases* 2004;4:310-326
- 111 Hedrich D. European report on drug consumption rooms. EMCDDA 2004 Luxembourg: Office for Publications of the European Communities. ISBN 92-9168-183-0
- 112 The Report of the Independent Working Group on Drug Consumption Rooms. London: Joseph Rowntree Foundation, 2006. ISBN 185935470X

Notes

Notes

Data sources

Reports of HIV infection

Voluntary confidential reports of new HIV diagnoses are received from laboratories and clinicians in England, Wales, and Northern Ireland by Cfl. Scottish and paediatric data is collected locally and incorporated with data from England, Wales and Northern Ireland on a quarterly basis to create a UK dataset. Surveillance began in 1982 with AIDS case reporting, and expanded to include laboratory reporting of HIV diagnoses in 1985. In England, Wales, and Northern Ireland, clinician HIV reports were introduced in 2000 to supplement laboratory reporting, and the AIDS information is now collected on the clinician HIV report.

HIV infected individuals accessing HIV-related care

A cross-sectional survey is carried out to identify all individuals with diagnosed HIV infection who attend for HIV related care at NHS sites in England, Wales and Northern Ireland within a calendar year. Scottish and paediatric data is collected locally and incorporated annually to create a UK dataset. This survey has been repeated annually since 1995.

Laboratory reports of viral hepatitis & bacterial infection

Clinically significant infections diagnosed in England, Wales and Northern Ireland are routinely reported to Cfl and held on a central system known as LabBase2. Most laboratories participate in the system, even if reporting is not mandatory. LabBase2 is therefore one of the most comprehensive sources of surveillance data, covering nearly all microbiologically-confirmed infections. Data on infections caused by group A streptococci and hepatitis A, B and C were all extracted from this reporting system. These reports contain demographic and risk information, although the risk factor information is not always provided. In Scotland, HPS collates data on all confirmed hepatitis C antibody tests from the main hepatitis C testing laboratories in Glasgow, Edinburgh, Dundee and Aberdeen.

The Unlinked Anonymous Prevalence Monitoring Programme's Survey of Injecting Drug Users

The UAPMP aims to measure the distribution of infection in sub-groups of the adult population. In the surveys that make up the UAPMP, samples are irreversibly unlinked from any identifying information before testing. The UAPMP's surveys have ethical approval.

The UAPMP survey of IDUs monitors HIV, hepatitis B and hepatitis C in injectors in contact with specialist services, such as needle exchanges, or on treatment programmes, such as methadone maintenance. Those who agree to participate provide a oral fluid sample and complete a behavioural questionnaire. Detailed methods used for the survey have been published previously¹. The survey of IDUs has been ongoing since 1990 in England & Wales, and was extended to Northern Ireland in 2002.

Further information about the UAPMP and comprehensive tables of data are available at:
www.hpa.org.uk/infections/topics_az/hiv_and_sti/hiv/epidemiology/ua.htm

A pilot of an enhancement to the UAPMP survey of IDUs started in 2003. This collaboration between CRDHB and the Cfl uses fieldworkers to target recruitment in settings where the UAPMP agency survey is difficult to deploy, such as mobile needle exchanges and through community recruitment. Dried blood spot specimens are collected rather than oral fluid samples.

Reference laboratory submissions

The key source of data on MRSA infections in IDUs is through referral of isolates to the SRU (part of Cfl) for reference microbiology.

Isolate referrals to the national reference laboratory RSIL (part of Cfl), are one of the primary sources of GAS infection reports (see strep-EURO below).

Data on clostridial infections are also available from reference microbiology work. For botulism this is carried out by FSML, and for tetanus by RSIL. For the other clostridia this is undertaken by the Anaerobe Reference Laboratory, NPHS Microbiology Cardiff.

Strep-EURO

Data from reference laboratory isolates and routine laboratory reports were combined as part of a two year enhanced surveillance programme (2003-04). Augmented surveillance data were sought through questionnaires sent to microbiologists nationally. Data reconciliation between the two sources has been maintained since the end of the project.

Notifications of infectious diseases

Clinicians throughout the UK are required by law to report a number of defined conditions to their local communicable disease specialist. Tetanus and hepatitis A, B and C are among these notifiable diseases.

Enhanced surveillance of tetanus

Enhanced surveillance of tetanus is carried out by the Cfl Immunisation Department
www.hpa.org.uk/infections/topics_az/tetanus/menu.htm

Surveillance of wound botulism

Surveillance of wound botulism among IDUs is carried out by the Cfl HIV & STI Department, with FSML. Reports are followed up with a surveillance questionnaire.

HTLV

The HIV & STI Department at Cfl collates reports of new HTLV diagnoses in England and Wales from laboratories and clinicians.

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